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ABSTRACT

In five chapters, 47 tables, and 26 figures, the authors describe national educational trends from 1968 to 1978 and project trends for 1978 to 1989. The report covers enrollments at all educational levels, numbers of high school graduates and earners of higher education degrees, numbers of instructional staff and educational expenditures at all levels, and costs charged to higher education students. The authors predict decreases through the 1980s in elementary, secondary, and postsecondary enrollments, high school graduates, baccalaureate degrees granted, and employed higher education teachers; but they foresee increases in elementary and secondary teachers and in expenditures at all levels. The data on enrollments, graduates, degrees, and teachers are controlled for several other variables, including age, sex, full- or part-time teaching or attendance, public or private control, field of study, two- or four-year program, graduate or undergraduate status, type of postsecondary degree, and teachers' academic rank. The financial data cover teacher salaries, capital outlays, interest payments, and sources of funds and control for current and constant (1978-1979) dollars. The report's six appendices (with 3 figures and 52 tables) discuss the authors' methods and definitions and supply supporting demographic and financial data. (RW)

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# Projections of Education Statistics to 1988-89

by

Martin M. Frankel
Debra E. Gerald

National Center for Education Statistics

NCES 80-402

EA 013 768

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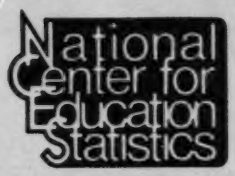


**National Center for Education Statistics**

"The purpose of the Center shall be to collect and disseminate statistics and other data related to education in the United States and in other nations. The Center shall . . . collect, collate, and, from time to time, report full and complete statistics on the conditions of education in the United States; conduct and publish reports on specialized analyses of the meaning and significance of such statistics; . . . and review and report on education activities in foreign countries."--Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

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# Foreword

This edition is the first biennial report of *Projections of Education Statistics*. This publication provides projections of statistics for elementary and secondary schools and institutions of higher education and includes statistics on enrollments, graduates, teachers, and expenditures for the period of 1979-80 to 1988-89. The projections in this edition supersede those shown in the *Projections of Education Statistics to 1986-87*, 1978 edition.

The projections in this edition are revisions based on an age-specific enrollment model and econometric models. The enrollment model uses population estimates and projections and estimates of age-specific enrollment obtained from the Bureau of the Census. The econometric models use forecasts of exogenous variables obtained from Data Resources, Inc.'s Macro-Economic Forecasting Model of the U.S. Economy.

For most of the series in this publication, high, intermediate, and low alternative projections are presented. These are based on three alternative sets of explicitly stated assumptions. Although the intermediate projections are the "preferred" set of projections, the high and low alternatives supply a range of possible future outcomes.

A summary of these projections is available separately in a pocket-sized folder entitled *Trends in Education, 1968-69 to 1988-89*.

Nancy-Jane Stubbs
Assistant Administrator for
Statistical Services
April 1980

# Acknowledgments

The *Projections of Education Statistics to 1988-89* was prepared by the National Center for Education Statistics (NCES) in the Division of Statistical Services under the supervision of Nancy-Jane Stubbs, Assistant Administrator for Statistical Services, and Forrest W. Harrison, Statistical Information Branch, Chief.

Project Director Martin M. Frankel and Associate Project Director Debra E. Gerald were responsible for the development and preparation of the report. Patricia L. Kuch prepared the chapter on expenditures of educational institutions and assisted Warren Dahlstrom in preparation of the chapter on student charges by institutions of higher education. Loraine C. Simpson was responsible for the development and verification of statistical tables.

In addition to reviewing portions of the report, William A. Combs was responsible for the development of the computerized interactive forecasting system used to produce enrollment projections; William Fetters assisted in the development of the methodology and assumption sections; and Eugene P. McLoone assisted in methodological development in the area of expenditures and student charges.

Valuable assistance was also provided by other persons within NCES. Thomas Hill, writer/editor, was responsible for the editorial review and designed the format; and Phil Carr, graphic artist, designed the cover. Nancy Dearman, Valena White Plisko and Leo Eiden reviewed sections of the manuscript, and Brenda M. Wade was responsible for typing the tables and the manuscript.

# How to Obtain More Information

Information about the Center's statistical program and a catalog of NCES publications may be obtained from the Statistical Information Office, National Center for Education Statistics, 1001 Presidential Building, 400 Maryland Avenue SW., Washington, D. C. 20202, telephone (301)436-7900.

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# Highlights

If present trends continue, decreases can be expected in:

- Enrollment in all regular public and private elementary and secondary schools:
  —From 47.6 million in 1978 to 45.0 million in 1988.
- Enrollment in institutions of higher education:
  —From 11.3 million in 1978 to 11.0 million in 1988.
- High School graduates from all public and private secondary schools:
  —From 3.1 million in 1977-78 to 2.7 million in 1988-89.
- Bachelor's degrees granted by institutions of higher education:
  —From 921,000 in 1977-78 to 892,000 in 1988-89.
- Full-time-equivalent instructional staff for resident courses in institutions of higher education:
  —From 597,000 in 1978 to 557,000 in 1988.

and increases can be expected in:

- Full-time-equivalent teachers in all regular public and private elementary and secondary schools:
  —From 2,460,000 in 1978 to 2,501,000 in 1988.
- Total expenditures of all regular public and private elementary and secondary schools:
  —From 100.0 billion in 1978-79 to 114.6 billion in 1988-89 (in 1978-79 dollars).
- Total expenditures of institutions of higher education:
  —From 55.0 billion in 1978-79 to 60.7 billion in 1988-89 (in 1978-79 dollars).

# Introduction

## Guide to the Publication

This is the 15th edition of *Projections* which provides a consistent set of projections for most key education statistics.

*Projections* contains a variety of tables, charts, and narrative presenting enrollment, teacher, graduate and expenditure data for the past 11 years and projections for the next 10 years.

The tables and charts in each chapter are preceded by a narrative detailing inclusions and exclusions of the statistical universe for each series, the basic assumptions and methodology underlying the projections, the rationale for selecting the methodology and assumptions used, and caveats that should be considered in using individual projections.

The footnotes to the tables provide published sources of the data (usually NCES surveys) and references to tables and other information in the appendixes.

Appendix A gives detailed technical explanations of methods used in developing projections; appendix B states the assumptions underlying the projections; appendix C contains estimation methods; appendix D - classification of degrees by field of study; appendix E is a glossary of terms; and appendix F contains tables of population projections and other tables of data used in making projections.

Table 1 and figure 1 show summaries of percent changes from 1968-69 to 1978-79 and from 1978-79 to 1988-89 for most key statistics.

## Changes in This Edition

This is the first edition of *Projections* published on a biennial basis. The projections in this publication supersede those in *Projections of Education Statistics to 1986-87*.

A biennial cycle was selected in order to allow for increased coverage, analysis, and model development. As a result, this publication includes projections of the following statistics that were not included in previous editions: (1) nursery and kindergarten enrollment by age and sex; (2) enrollment in institutions of higher education by age, sex, and attendance status; (3) enrollment in institutions of higher education by sex, attendance status and level enrolled of students, and by type and control of institution; (4) full-time-equivalent enrollment by level enrolled and type and control of institution; and (5) earned degrees by level and field of study and by sex of recipient.

Much of this increased coverage is a result of large scale forecasting models developed during the past 2 years. Enrollment projections are based on IFMOD, an interactive forecasting model based on age-specific enrollment rates by sex and by enrollment levels, nursery school through college. Degree projections by level and sex are based on demographic models relating degree output to college enrollments by year enrolled, attendance status, and age of degree recipient. Projections of expenditures for both elementary and secondary schools and for colleges are based on econometric models. Forecasts of exogenous economic variables were obtained from Data Resources, Inc.'s Macro-Economic Forecasting Model for the Nation.

The increased coverage of these models, and the incorporation of forecasts of economic variables in expenditure projections allow for greater analysis in each chapter.

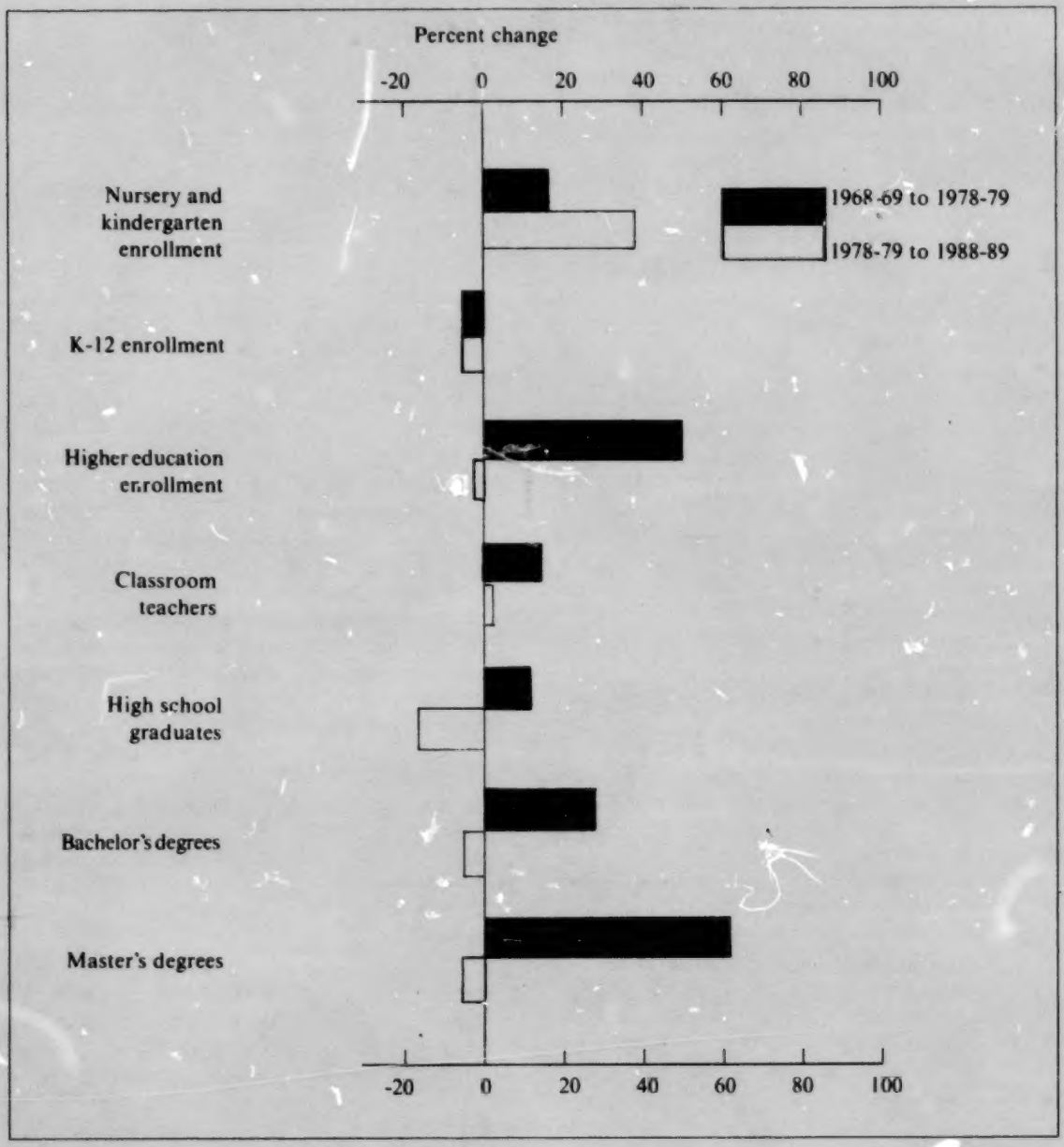
## Caveats

Because of the inherent nature of the statistical universes from which the basic data are obtained and the properties of the projection methodologies, which depend on the validity of many assumptions, projections of time series into the future are subject to errors from many sources. Therefore, those using projections are cautioned against placing too much confidence in the accuracy of the numerical values of

the projections. To emphasize this fact, alternative projections are shown for most statistical series.

In addition, a separate appendix section on assumptions (appendix B) is included in this publication. It is imperative that users of these projections review the underlying assumptions in order to evaluate the suitability of the projections for their purposes.

**Figure 1.—Percent change in selected education statistics United States, 1968-69 to 1978-79 and 1978-79 to 1988-89**




Source: Table 1.

## Table 1.—Summary of trends in education: United States, 1968-69 to 1988-89

| Characteristic | 1968-69 (000s) | 1978-79 (000s) | Percent change 1968-69 to 1978-79 | 1988-89[1] (projected) (000s) | Percent change 1978-79 to 1988-89 |
|---|---|---|---|---|---|
| **School-age population:** | | | | | |
| 3-4 | 7,645 | 6,059 | -21 | 7,708[2] | 27 |
| 5-13 | 36,805 | 31,383 | -15 | 30,944[2] | -1 |
| 14-17 | 15,173 | 16,649 | 10 | 13,480[2] | -19 |
| Average of 17 and 18 | 3,612 | 4,237 | 17 | 3,646 | -14 |
| **College-age population:** | | | | | |
| 18-24 | 22,883 | 28,980 | 27 | 25,967 | -10 |
| 25-29 | 12,800 | 18,055 | 41 | 20,631 | 14 |
| 30-34 | 11,190 | 15,894 | 42 | 20,487 | 29 |
| **Public school districts** | 20.4 | 16.0 | -22 | ... | ... |
| Operating | 19.3 | 15.7 | -19 | ... | ... |
| Nonoperating | 1.1 | 0.3 | -73 | ... | ... |
| **College and Universities[3]:** | | | | | |
| Total | 2,495 | 2,897 | 16 | ... | ... |
| Public | 1,015 | 1,257 | 24 | ... | ... |
| 4-year | 420 | 463 | 10 | ... | ... |
| 2-year | 595 | 794 | 33 | ... | ... |
| Private | 1,480 | 1,640 | 11 | ... | ... |
| 4-year | 1,208 | 1,369 | 13 | ... | ... |
| 2-year | 272 | 271 | 0 | ... | ... |
| **Enrollment:** | | | | | |
| Nursery and kindergarten | 4,070 | 4,813 | 18 | 6,682 | 39 |
| K-grade 12 | 50,744 | 47,611 | -6 | 44,974 | -6 |
| K-8 | 36,626 | 32,055 | -12 | 32,259 | 1 |
| 9-12 | 14,118 | 15,556 | 10 | 12,715 | -18 |
| Public | 44,946 | 42,611 | -5 | 39,374 | -8 |
| K-8 | 32,226 | 28,455 | -12 | 28,259 | -1 |
| 9-12 | 12,718 | 14,156 | 11 | 11,115 | -21 |
| Nonpublic | 5,800 | 5,000 | -14 | 5,600 | 12 |
| K-8 | 4,400 | 3,600 | -18 | 4,000 | 11 |
| 9-12 | 1,400 | 1,400 | 0 | 1,600 | 14 |
| **Higher education:** | | | | | |
| Total | 7,513 | 11,259 | 50 | 11,048 | -2 |
| Public | 5,431 | 8,784 | 62 | 8,754 | 0 |
| 4-year | 3,784 | 4,911 | 30 | 4,557 | -7 |
| 2-year | 1,646 | 3,873 | 135 | 4,197 | 8 |
| Men | 5,198 | 4,331 | 35 | 4,373 | 1 |
| Women | 2,232 | 4,453 | 100 | 4,381 | -2 |
| Full-time | 3,657 | 4,873 | 33 | 4,586 | -6 |
| Part-time | 1,773 | 3,911 | 121 | 4,168 | 7 |
| Undergraduate | 4,782 | 7,786 | 63 | 7,708 | -1 |
| Graduate | 548 | 894 | 63 | 930 | 4 |
| First-professional | 64 | 105 | 64 | 116 | 10 |
| Full-time-equivalent | 4,228[4] | 6,291 | 49 | 6,101 | -3 |

See footnotes at end of table.

**Table 1.—Summary of trends in education: United States, 1968-69 to 1988-89—Cont.**

| Characteristic | 1968-69 (000s) | 1978-79 (000s) | Percent change 1968-69 to 1978-79 | 1988-89[1] (projected) (000s) | Percent change 1978-79 to 1988-89 |
|---|---|---|---|---|---|
| Private | 2,083 | 2,475 | 19 | 2,294 | -7 |
| 4-year | 1,937 | 2,320 | 20 | 2,137 | -8 |
| 2-year | 146 | 155 | 6 | 157 | 1 |
| Men | 1,280 | 1,309 | 2 | 1,258 | -4 |
| Women | 803 | 1,166 | 45 | 1,036 | -11 |
| Full-time | 1,553 | 1,794 | 16 | 1,599 | -11 |
| Part-time | 530 | 681 | 28 | 695 | 2 |
| Undergraduate | 1,694 | 1,905 | 12 | 1,709 | -10 |
| Graduate | 301 | 418 | 39 | 428 | 2 |
| First-profesional | 88 | 152 | 73 | 157 | 3 |
| Full-time-equivalent | 1,726 | 2,070 | 20 | 1,866 | -10 |
| **Instructional staff:** | | | | | |
| Elementary and secondary | | | | | |
| Classroom teachers | 2,161 | 2,460 | 14 | 2,501 | 2 |
| Elementary | 1,223 | 1,352 | 11 | 1,529 | 13 |
| Secondary | 938 | 1,108 | 18 | 971 | -12 |
| Public | 1,936 | 2,199 | 14 | 2,194 | 0 |
| Elementary | 1,076 | 1,178 | 9 | 1,318 | 12 |
| Secondary | 860 | 1,021 | 19 | 876 | -14 |
| Nonpublic | 225 | 261 | 16 | 306 | 17 |
| Elementary | 147 | 174 | 18 | 211 | 21 |
| Secondary | 78 | 87 | 12 | 95 | 9 |
| **Higher education:** | | | | | |
| Instructional staff | 523 | 809 | 55 | 759 | -6 |
| Full-time-equivalent | 412 | 597 | 45 | 557 | -7 |
| **High School graduates[3]** | 2,829 | 3,149 | 11 | 2,651 | -16 |
| Public | 2,529 | 2,829 | 12 | 2,341 | -17 |
| Nonpublic | 300 | 320 | 7 | 310 | -3 |
| Boys | 1,402 | 1,546 | 10 | 1,305 | -16 |
| Girls | 1,427 | 1,603 | 12 | 1,346 | -16 |
| **Earned degrees[4]** | | | | | |
| Bachelor's | 729 | 933 | 28 | 892 | -4 |
| Men | 411 | 495 | 20 | 458 | -7 |
| Women | 318 | 439 | 38 | 433 | -1 |
| First-professional | 25 | 68 | 94 | 75 | 10 |
| Men | 34 | 53 | 56 | 53 | 0 |
| Women | 2 | 15 | 650 | 21 | 40 |
| Master's | 194 | 314 | 62 | 295 | -6 |
| Men | 122 | 159 | 30 | 146 | -8 |
| Women | 72 | 155 | 115 | 149 | -4 |
| Doctor's | 26 | 32 | 23 | 28 | -13 |
| Men | 23 | 23 | 0 | 20 | -13 |
| Women | 3 | 9 | 200 | 8 | -11 |

See footnotes at end of table.

## Table 1.—Summary of trends in education: United States, 1968-69 to 1988-89—Cont.

| Characteristic | Current unadjusted dollars | | Constant 1978-79 dollars |
|---|---|---|---|
| | 1968-69 | 1978-79 | 1988-89 |
| | (Billions of dollars) | | |
| **Total expenditures by regular educational institutions:[6]** | | | |
| All levels | 61.2 | 155.0 | 175.3 |
| Public | 49.2 | 126.4 | 142.3 |
| Nonpublic | 12.0 | 28.6 | 33.0 |
| Elementary and secondary schools | 39.2 | 100.0 | 114.6 |
| Public | 35.2 | 89.4 | 100.6 |
| Nonpublic | 4.0 | 10.6 | 14.0 |
| Institutions of higher education | 22.0 | 55.0 | 60.7 |
| Public | 14.0 | 37.0 | 41.7 |
| Nonpublic | 8.0 | 18.0 | 19.0 |
| | (Dollars) | | |
| **Current expenditure per pupil in average daily attendance in public elementary secondary schools** | 696 | 2,036 | 2,504 |

| Characteristic | Current unadjusted dollars | | Constant 1978-79 dollars |
|---|---|---|---|
| | 1968-69 | 1978-79 | 1988-89 |
| | (Dollars) | | |
| **Estimated average charges per full-time-equivalent student:** | | | |
| Tuition and required fees: | | | |
| Public | 295[4] | 554 | 554 |
| Nonpublic | 1,383[4] | 2,793 | 2,793 |
| Board: | | | |
| Public | 485[4] | 796 | 847 |
| Private | 534[4] | 904 | 939 |
| Dormitory room: | | | |
| Public | 337[4] | 659 | 662 |
| Private | 404[4] | 780 | 770 |

[1]Intermediate alternative projections are based on assumptions and methodology shown in appendixes A and B of *Projections of Education Statistics to 1988-89*. Users should check the acceptability of these assumptions for their purposes.

[2]Population projections are series II projections from the Bureau of the Census.

[3]Excludes branch campuses.

[4]From 1977 edition of *Projections*.

[5]Projected in 1978-79.

[6]Includes current expenditures, interest, and capital outlay.

NOTE.—Data are for the 50 States and the District of Columbia. Because of rounding, details may not add to totals.

# Chapter I
# ENROLLMENT

## All Levels

Total fall enrollment (elementary, secondary, and higher education) increased from 58.3 million in 1968 to a high of 61.1 million in 1975. Since then enrollment has declined to 58.9 million in 1978 and is expected to continue declining through 1985 when it will reach a low of 55.1 million. By 1988 enrollment is expected to increase slightly to 55.9 million (table 2). These totals include daytime enrollment in all regular public and nonpublic (church affiliated and nonsectarian) elementary and secondary schools; degree-credit enrollment in publicly and privately controlled institutions of higher education in programs leading to a bachelor's or higher degree; and non-degree-credit enrollment in programs that extend not more than 3 years beyond high school and are designed to prepare students for technical, semiprofessional, or craftsman-clerical positions.

Excluded from the enrollments in institutions of higher education are noncredit courses of regular length; short courses of any kind; and correspondence, television, or radio courses, some of which are degree credit courses. Also excluded are enrollments in "special" (mostly private business and trade) schools. Excluded from the enrollments in elementary and secondary schools are those in "other" elementary and secondary schools which are defined as (1) enrollments in public and nonpublic subcollegiate, vocational, technical, and trade schools, unless they are a part of the regular school system; (2) enrollments in evening classes in regular public schools; (3) enrollments in elementary and secondary grades in public and nonpublic residential schools for exceptional children, Federal schools for Indians, federally operated schools on Federal installations, and subcollegiate departments of public and nonpublic institutions, and (4) enrollments in independent public and nonpublic nursery schools and kindergartens (exclusively preprimary schools).

## Enrollment in Nursery Schools and Kindergartens

Enrollment in nursery schools and kindergartens increased from 4.1 million in 1968 to 5.1 million in 1975 and has since dropped to 4.8 million. Although the 3-to-5-year old population decreased throughout most of the period from 1968 to 1975, increased enrollment rates more than offset the population declines, resulting in increased enrollments. However, from 1975 to 1978 the population declines were too great to be counteracted by increases in enrollment rates. As a result, enrollment decreased during this period.

Starting in 1980, the 3-to-5-year old population is expected to begin increasing. This population increase combined with enrollment rate increases equal to half the increase expected on the basis of past trends resulted in the intermediate alternative projections shown in table 3. Nursery and kindergarten enrollment is expected to increase from 4.8 million in 1978 to 6.7 million in 1988. For 3-and 4-year olds, most of the increases are expected in nonpublic schools, while for 5-year olds most of the increases will be in public schools.

The low alternative asssumes that the age-specific enrollment rates will remain constant at levels consistent with the most recent observations. Under this assumption the increase will be only about 60 percent as large, from 4.8 million in 1978 to 5.9 million in 1988.

The high alternative assumes that past trends in enrollment rates will continue throughout the projected period. Under this assumption nursery and kindergarten enrollment will increase to 7.5 million

in 1988, an increase over 40 percent larger than the increase projected in the intermediate alternative projection. The high alternative shows a larger portion of the enrollment being made up of 3-and 4-year olds than the intermediate projection. This occurs because the enrollment rate of 5-year olds is so close to 100 percent that there is little room for additional increases. However, 3-and 4-year olds have a large potential for growth in enrollment rates.

# Regular Elementary and Secondary Schools

Enrollment in regular elementary and secondary schools reached a peak of 51.3 million in 1970 (table 4 and 5). Since then enrollment has declined steadily reaching 47.6 million in 1978. These enrollments are expected to continue decreasing until they reach a low point of 43.6 million in 1984 and then begin a gradual climb, reaching 45.0 million in 1988.

Projections of enrollments in both public and nonpublic elementary and secondary schools are based primarily on the assumption that age-specific enrollment rates by sex will remain constant throughout the projected period. The enrollment rates for most of the school-age population (5-to-17-year-olds) are all approximately 100 percent. As a result, K-8 enrollments closely reflect the 5-to 13-year old population, and 9-12 enrollments tend to reflect the 14-to-17-year old population.

Since the enrollment rates for individuals aged 5 through 17 are approximately 100 percent, alternative enrollment rate projections were not computed. The single set of projected enrollment rates was applied to Bureau of the Census Series II population projections to obtain projections of enrollments in elementary and secondary schools (appendix table F-1.) At the present time, the Series II population projections are holding up, whereas the alternative projections, series I and III, are already obsolete, especially for the relatively short-range projections considered in this publication. Therefore, the projected enrollment rates are only applied to series II population projections, and alternative projections of enrollment in elementary and secondary schools are not shown.

Enrollment in regular public elementary and secondary schools reached a peak of 46.1 million in 1971 and have since declined to 42.6 million in 1978. Enrollments in these schools are expected to continue declining, reaching 38.5 million in 1984, before increasing to 39.4 million in 1988.

Projections of enrollments in regular public elementary and secondary schools (tables 4 and 5) are computed by using a grade-retention method. This method depends mainly on assumptions about the entrance of 6-year olds into the first grade and their subsequent progress through elementary and secondary schools as determined by projected grade-retention rates. These projections are based primarily on the assumption that grade-retention rates will hold constant throughout the projected period. The retention rates for grades 2 through 10 are all close to 100 percent. In fact, the retention rates for grades 6 to 7 and grades 8 to 9 are significantly over 100 percent. Traditionally, these are the grades at which large numbers of nonpublic elementary students transfer to public secondary schools.

The retention rates for grades 10 to 11 and grades 11 to 12 are about 90 percent, allowing for increased retention that would result in increased enrollment at the secondary level. Since these rates have not increased during the past 10 years, they are projected to remain constant throughout the projection period.

Enrollment in regular nonpublic elementary and secondary schools decreased from 5.8 million in 1968 to 4.9 million in 1973. Since that time, nonpublic enrollment has fluctuated around 5.0 million and is expected to continue doing so for the next few years before beginning a gradual increase in 1983. By 1988, enrollment in nonpublic schools is expected to reach 5.6 million. In contrast, enrollment in public schools is not expected to begin increasing until 1985, and should not increase as rapidly as nonpublic schools.

Projections of enrollments in nonpublic schools are computed as the differences between projections of total enrollment and projections of public enrollment. The major disadvantage of this method is that relatively small errors in public enrollment projections may result in relatively large nonpublic enrollment errors. However, it is not possible to project systematically nonpublic enrollment independently because of the scarcity of nonpublic enrollment data. The nonpublic enrollment projections in this edition, although subject to the types of errors already mentioned, should prove to be more useful than the constant nonpublic enrollment projections in earlier editions.

## Grade Group

Enrollment in grades K-8 of public and nonpublic schools decreased from a high of 36.8 million in 1969 to 32.1 million in 1978 (table 4). This decline is expected to continue through 1984 when K-8 will

bottom out at 30.1 million. By 1988, K-8 enrollment will reach 32.3 million, sightly more than the 1978 level. In contrast, 9-12 enrollment increased throughout most of the past ten years, from 14.1 million in 1968 to a high of 15.7 million in 1976. Only slight decreases occurred in 1977 and 1978, but significant decreases are expected throughout the projection period as the low birth cohorts of the 1960's and early 1970's move through grades K-8 into grades 9-12. By 1988, 9-12 enrollment is expected to drop to 12.7 million (figure 2).

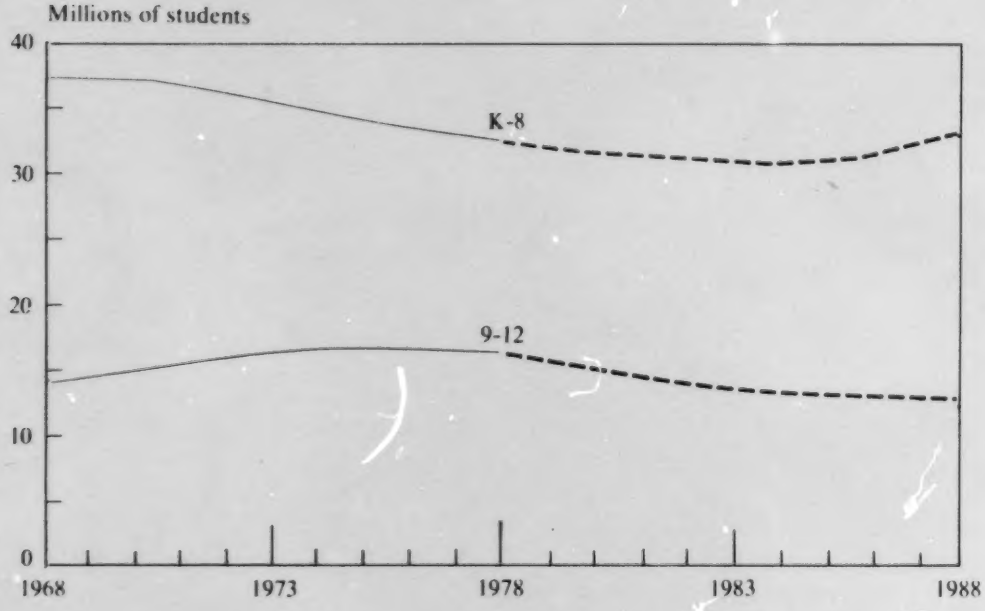
## Organizational Level

Students in 7th and 8th grade in K-8 schools are considered elementary students, while those in junior high schools or high schools are considered secondary students. However in many cases, students are reported strictly by grade group. As a result, the past and projected enrollments by organizational levels in table 5, should be used with caution.

Enrollments in elementary schools decreased from 31.8 million in 1968 to 28.7 million in 1978. This decline is expected to continue through 1983 when enrollment reaches 26.5 million. By 1988, elementary enrollment is expected to be 28.9 million.

Secondary enrollment increased from 19.0 million in 1968 to 20.6 million in 1975. By 1978, enrollment in these schools dropped to 19.0 million and is expected to continue decreasing, reaching 16.1 million in 1988.

**Figure 2.—Enrollment in grades K-8 and 9-12 of regular schools: United States, fall 1968 to 1988**




Source: Table 4.

# Institutions of Higher Education

Enrollments in institutions of higher education increased from 7.5 million in 1968 to 11.3 million in 1978. Enrollments in these institutions are expected to increase slightly over the next few years, reaching 11.7 million in 1981 before decreasing to 11.0 million in 1988 (figure 3). These enrollment projections are consistent with population projections for the traditional college-age population, 18-to-24-year olds. Enrollment for this age group will decrease for the first time in 1982, the first year that a decline is projected.

However, college enrollment is not expected to decline as rapidly as the 18-to-24-year-old population because large numbers of students, 25 years old and over are also enrolled in college. The large birth cohorts of the late 1940's and 1950's will be in the 25 to 34 age group throughout most of the projected period. Enrollments in this age group are expected to offset partially the effects of the decline of traditional college age population. But, many of these older students will be enrolled part-time, whereas traditional-age students are more likely enrolled full-time. Therefore, full-time-equivalent enrollment will decline more rapidly than total enrollment.

# Enrollments by Age

Table 6 shows college enrollments by age, sex, and attendance status. Table 6a shows low alternative projections and table 6b shows high alternative projections. The intermediate projections are based primarily on the assumptions that age-specific enrollment rates by sex and attendance status will remain constant throughout the projection period and primarily reflect shifts in the age-distribution of the population. As a result, men should continue to make up a slight majority of total college enrollment through 1988. Enrollments in younger age groups (less than 25 years old) will decrease from 1978 to 1988, while the older age groups will increase. Since older students are more likely to enroll part-time, full-time enrollment is expected to decrease from 6.7 million in 1978 to 6.2 million in 1988 and part-time enrollment is expected to increase from 4.6 million to 4.9 million (figures 4 and 5).

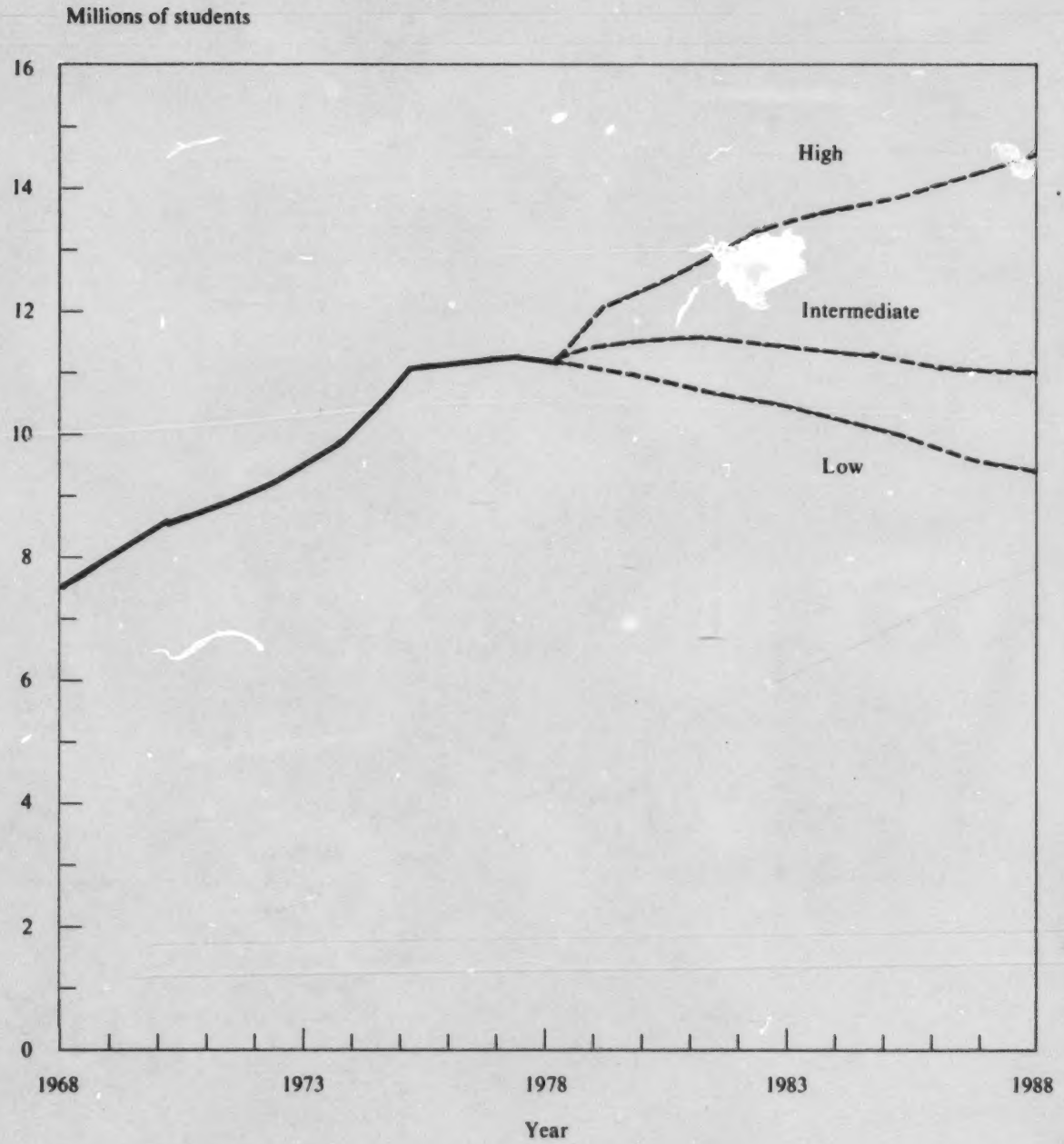
The low alternative projections (table 6a) are based primarily on the assumptions that age-specific enrollment rates by attendance status for men will continue to decline as they have during the past few years, and that enrollment rates for women will decline proportionally for each age by attendance status. This alternative shows a decrease from 11.3 million in 1978 to 9.5 million in 1988. Most of the decrease is in full-time enrollments, which will decrease under this alternative from 6.7 million to 5.2 million, while part-time enrollment will decrease slightly from 4.6 million to 4.4 million.

The high alternative projections (table 6b) are based primarily on the assumptions that age-specific enrollment rates by attendance status for women will continue to increase as they have throughout most of the past 10 years, and for men will stop their recent decreases and climb back to the high level experienced in 1970. Under this alternative, college enrollment will increase from 11.3 million in 1978 to 14.5 million in 1988, with full-time enrollment increasing from 6.7 million to 8.0 million and part-time enrollment increasing from 4.6 million to 6.5 million.

The high and low alternative projections, which vary by 5.0 million in 1988, are shown primarily to indicate the level of uncertainty involved in making higher education enrollment projections. There is little uncertainty involved in projecting college-age populations for the next 10 years, since those projections are based on actual past births. However, there is a great deal of uncertainty involved in projecting enrollment rates since they are affected by many social and economic factors such as unemployment levels, the cost of a college education, family income, levels of student aid, the economic value of a college education, etc.

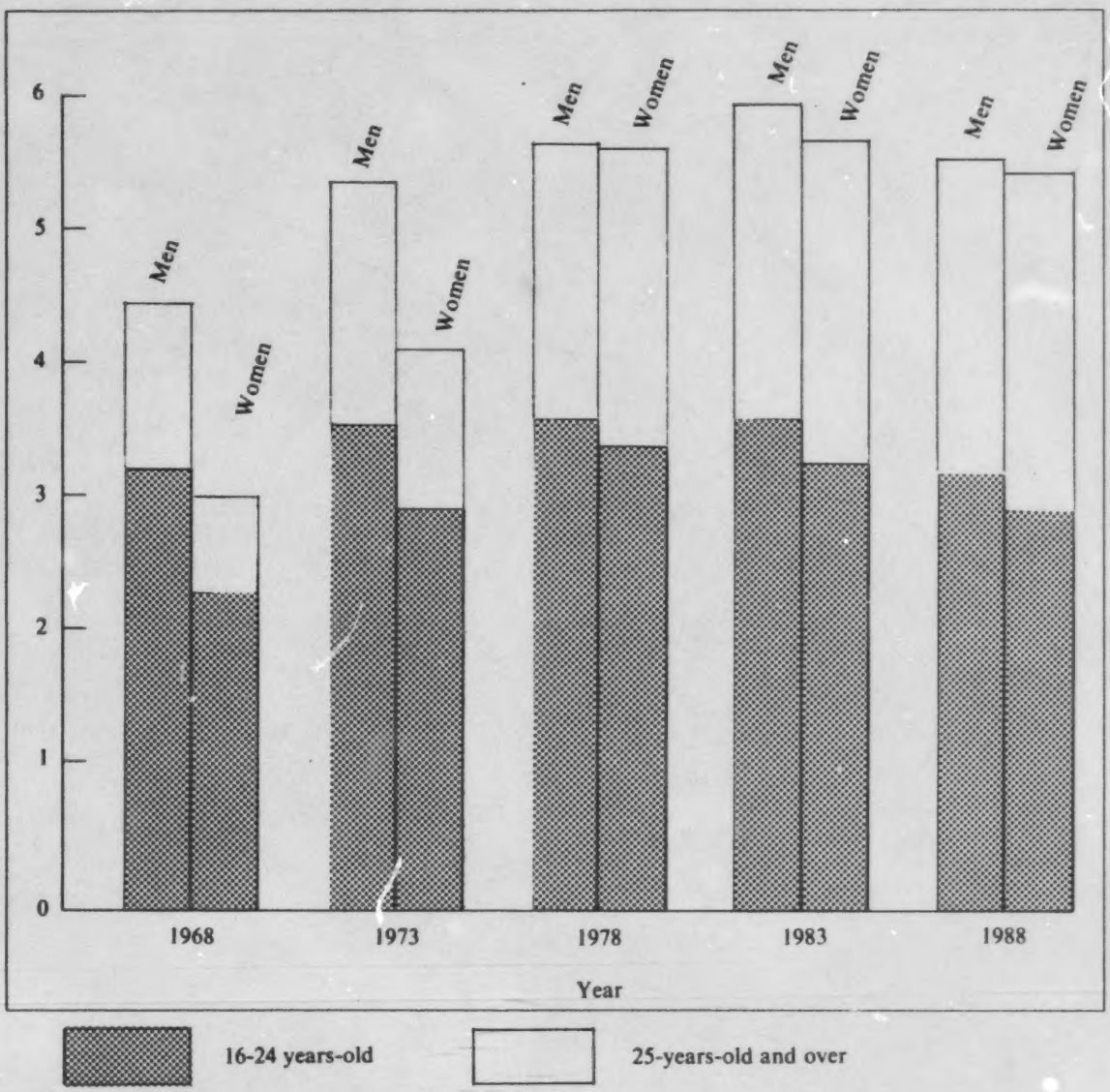
*Projections* takes the approach that the uncertainty involved in dealing explicitly with these economic and social factors is so great, that it is preferable simply to extrapolate the enrollment rates themselves. However, the enrollment rates have been separated by age, sex, and attendance status to reflect the varying propensity of people in these different categories to enroll in college. For college enrollment projections, 48 separate enrollment rates were projected (12 age and age-groups by sex and by attendance status). NCES is currently investigating alternative techniques to use in projecting enrollment rates, especially econometric models. Projections based on alternative techniques will be included in future editions of *Projections* for those techniques which prove to be useful.

**Figure 3.—Total enrollment in institutions of higher education, with alternative projections: United States, fall 1968 to 1988**



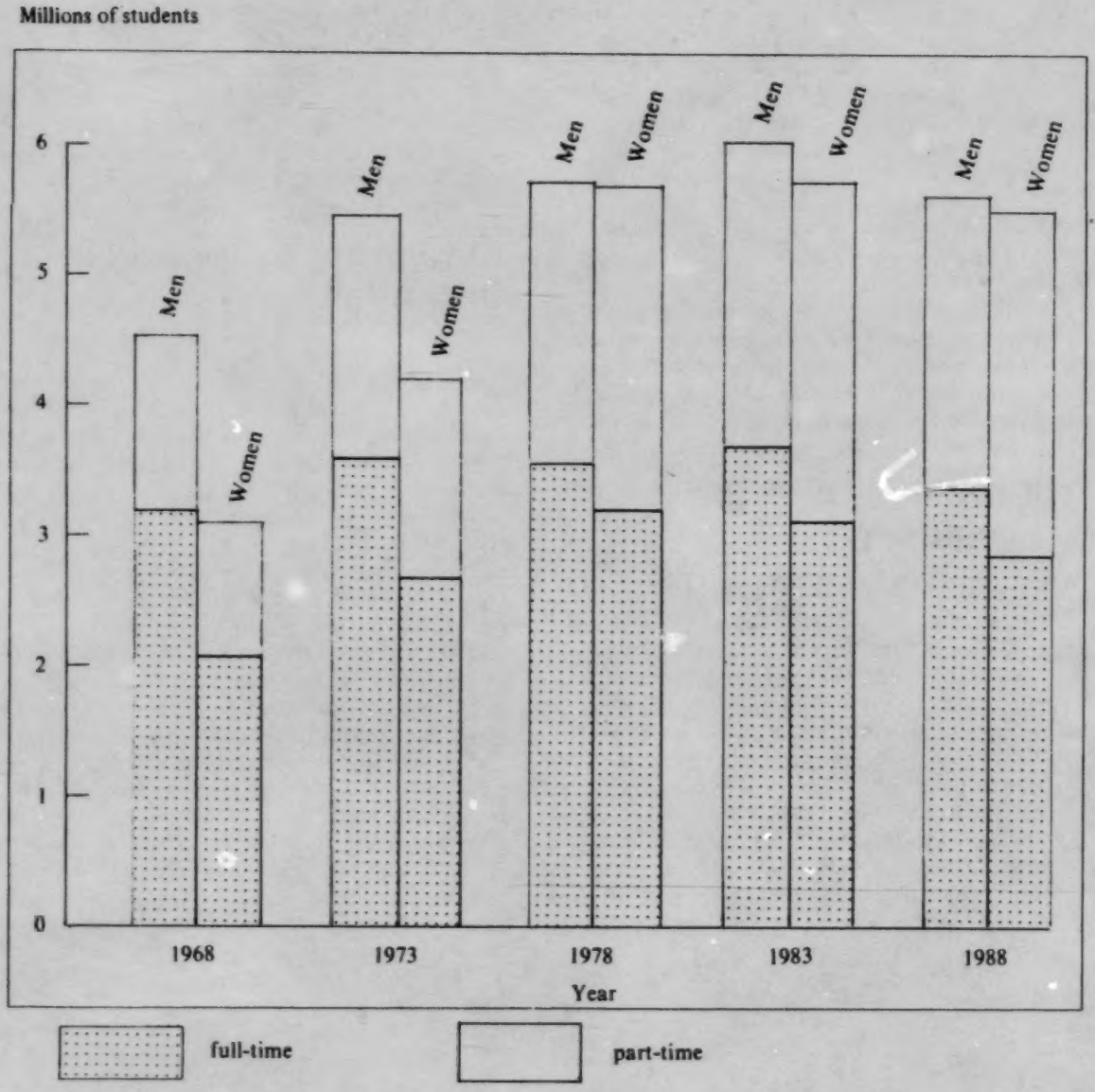

Source: Table 7.

**Figure 4.—Total enrollment in institutions of higher education, by age and sex: United States, fall 1968, 1973, 1978, 1983, and 1988**




Source: Table 6

**Figure 5.—Total enrollment in institutions of higher education, by sex and attendance status: United Status, fall 1968, 1973, 1978, 1983, and 1988**




Source: Table 6.

## Intermediate Alternative Projections

Most of the following sections in this chapter discuss intermediate projections. As already noted, these projections are based primarily on the assumption that age-specific enrollment rates by sex and attendance status will remain constant throughout the projection period. This assumption was made for the following reasons: (1) enrollment rates for men, which have declined during most of the past 10 years, seem to have leveled off during the past few years; (2) enrollment rates for women, which have increased during most of the past 10 years, seem to have leveled off during the past few years; (3) projections made in the 1979 edition of this publication based on the assumption of constant enrollment rates have corresponded closely to actual enrollment counts; and (4) enrollment projections based on constant enrollment rates measure the effects of population changes alone. Deviations from these projections can be directly related to changing enrollment rates.

## Enrollment by Type of Institution

As already noted, the traditional college-age population (18-to-24-year olds) is expected to decrease beginning in 1982. Undoubtedly, this will have an adverse effect on the ability of institutions to maintain or increase their enrollments. However, not all categories of institutions of higher education are likely to be affected equally. For while the 18-to-24-year old population will decrease from 29.5 million in 1981 to 26.0 million in 1988, the 25-to-34-year old population will increase from 37.5 million to 41.1 million. Therefore, those institutions that are able to attract older students will not be as adversely affected by the projected decline in traditional college-age students.

NCES estimates that in 1977, only 22 percent of the undergraduates enrolled in 4-year institutions were 25 years old or over. In contrast, in 2-year institutions, where almost all of the enrollment is at the undergraduate level, 39 percent of those enrolled were 25 years old or over.

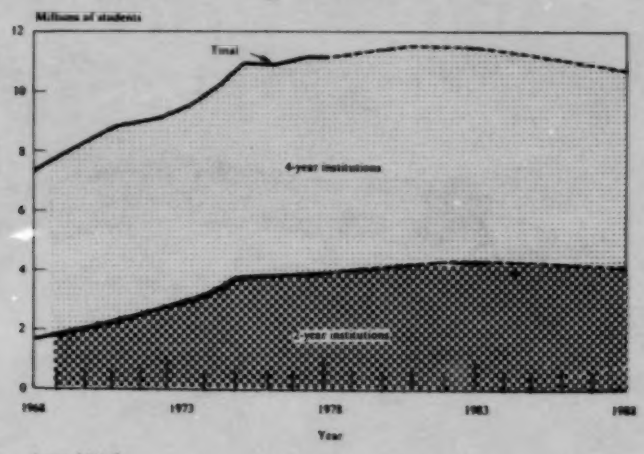
The heavier reliance of 4-year institutions on traditional college-age students for enrollments is reflected in future projections. Table 7A shows that enrollment in these institutions is expected to increase only slightly from 7.2 million in 1978 to 7.3 million in 1981 before decreasing to 6.7 million in 1988. In contrast, table 7B shows that enrollment in 2-year institutions are expected to increase from 4.0 million in 1978 to 4.4 million in 1983 and then decrease to slightly less than 4.4 million in 1988 (figure 6).

## Enrollment by Control of Institution

Enrollment in private institutions is expected to decrease from 2.5 million in 1978 to 2.3 million in 1988. Enrollment in public institutions is expected to increase from 8.8 million in 1978 to 9.2 million in 1981 before dropping back to 8.8 million in 1988. Public institutions are expected to fare better than private institutions because most 2-year institutions are public and 96 percent of enrollment in 2-year institutions is in public colleges. This means that the expected decline of 181,000 students in private institutions will occur primarily in 4-year institutions. Table 8C shows that the expected decline in full-time enrollments in 4-year private institutions is even larger, 195,000 from 1978 to 1988, and table 9C shows that almost all of the full-time decline will be in undergraduate enrollments. Private 4-year institutions that rely heavily on the enrollments of full-time undergraduate students may have more difficulty in maintaining their enrollment levels than schools that are able to attract significant numbers of part-time and post-baccalaureate students. One analysis of the expected decline in full-time undergraduate enrollment even predicted that a fairly large number of small, primarily private colleges will close over the next decade.[1]

[1]Robert D. Behn, "The End of the Growth Era in Higher Education," A prepared statement presented to the Committee on Labor and Human Resources, United States Senate, June 7, 1979.

**Figure 6.—Total enrollment in institutions of higher education, by type of institution: United States, fall 1968 to 1988**




Source: Table 7

# Full-Time-Equivalent Enrollment

During the past few years, part-time enrollments have been primarily responsible for the high enrollment levels. From 1974 to 1978 total enrollment increased by slightly over 1 million students. Over 700,000 of that increase occurred in part-time enrollments. In contrast full-time-equivalent-enrollment increased by only 556,000. In the 1980's the expected enrollment declines of traditional college-age, mostly full-time students will be offset to a large degree by increases in older, mostly part-time students. However, when these increases in part-time enrollment are converted to full-time equivalents, they will not be large enough to counteract the declines in traditional college-age enrollments.

Full-time-equivalent enrollment increased from 6.7 million in 1970 to 8.5 million in 1975. From 1975 to 1978, full-time-equivalent enrollment fluctuated around 8.4 million and is expected to increase to 8.6 million in 1981. By 1988, full-time-equivalent enrollment is expected to drop to less than 8.0 million (figure 7).

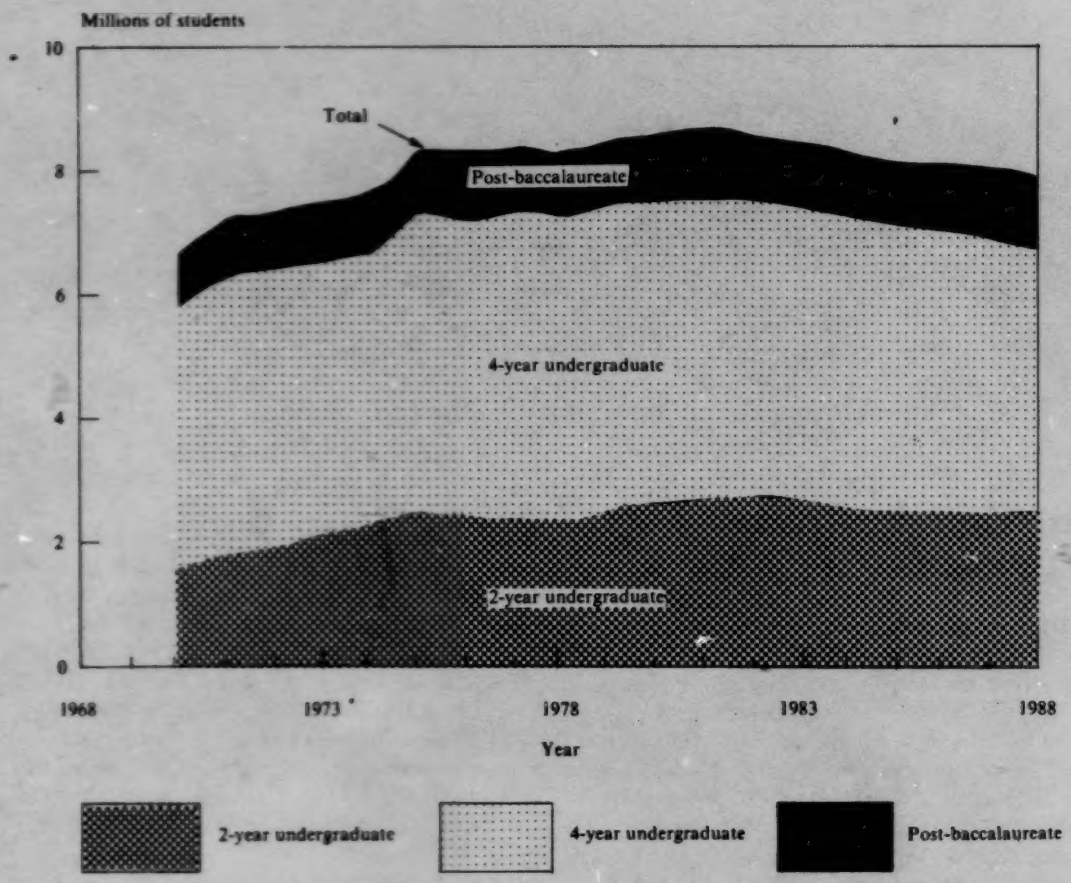
Total enrollment is expected to decrease 211,000 from 1978 to 1988 (table 7). During the same period, table 12 shows a decrease in full-time-equivalent enrollment of 394,000, nearly double the decrease in total enrollment. Table 12 also shows that the decrease in the full-time equivalent of undergraduate enrollment in 4-year institutions is more than 50 percent larger than the total drop in full-time-equivalent enrollment.

Full-time-equivalent enrollment in 2-year institutions is expected to increase by over 200,000, offsetting somewhat the over 600,000 decline in full-time-equivalent-undergraduate enrollment in 4-year institutions. Table 12a shows that two-thirds of the 600,000 decline will occur in public institutions. Since public institutions generally are larger than private institutions and can rely on State and local governments for financial support, most public 4-year schools will be able to survive the coming enrollment decline. However, private 4-year institutions, which face a smaller absolute decline in full-time-equivalent enrollment, but a slightly larger relative decrease, may not fare as well since they cannot rely on public financial support.

The Carnegie Council on Policy Studies in Higher Education[2] lists only 11 public institutions (average enrollment 1,800) in the Liberal Arts College II category compared to 449 private institutions, with an average enrollment of about 800 students. Should the bulk of the expected drop of 202,000 full-time-equivalent-students occur in the small private liberal arts colleges, many could face closure.

[2]Carnegie Council on Policy Studies in Higher Education, *A Classification of Institutions of Higher Education*, 1976.

**Figure 7.—Full-time-equivalent enrollment in institutions of higher education, by level enrolled: United States, fall 1968 to 1988**




Source: Table 12.

# Post Baccalaureate Enrollment

Graduate and first-professional enrollments are expected to increase slightly throughout most of the next 10 years and then decrease slightly at the end of the projected period. Table 10 shows that graduate enrollment increased from 885,000 in 1968 to 1,312,000 in 1978. In 1988 graduate enrollment is expected to be 1,358,000. First-professional enrollment (table 11) increased from 152,000 in 1968 to 257,000 in 1978 and is expected to increase slightly to 273,000 in 1988.

Since 1972, women accounted for most of the increases in first-professional enrollment. The number of women enrolled increased from 24,000 in 1972 to 65,000 in 1978, while the number of men increased only slightly, from 183,000 to 192,000 over the same period. Although, women only made up 25 percent of first-professional enrollment in 1978, they more than doubled the proportion they represented in 1972. By 1988, first-professional enrollment of women is expected to increase to 81,000, increasing their share of first-professional enrollment to nearly 30 percent. During the same period, first-professional enrollment of men is expected to remain fairly constant at about 190,000.

**Table 2.—Summary of enrollment in educational institutions, with alternative projections, by level and control of institution: United States, fall 1968 to 1988[1]**

**(In thousands)**

| Year (fall) | Total enrollment | | | Institutions of higher education | | Regular elementary and secondary schools | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grades K-8 | | Grades 9-12 | |
| | Total | Public | Nonpublic | Public | Nonpublic | Public | Nonpublic | Public | Nonpublic |
| 1968 | 58,288 | 50,375 | 7,913 | 5,431 | 2,082 | 32,226 | 4,431 | 12,718 | 1,400 |
| 1969 | 59,140 | 51,516 | 7,624 | 5,897 | 2,168 | 32,597 | 4,217 | 13,022 | 1,299 |
| 1970 | 59,899 | 52,337 | 7,562 | 6,428 | 2,153 | 32,577 | 4,109 | 13,332 | 1,300 |
| 1971 | 60,152 | 52,885 | 7,267 | 6,804 | 2,144 | 32,265 | 3,823 | 13,816 | 1,300 |
| 1972 | 60,000 | 52,815 | 7,185 | 7,071 | 2,144 | 31,831 | 3,738 | 13,913 | 1,303 |
| 1973 | 59,982 | 52,850 | 7,132 | 7,420 | 2,183 | 31,353 | 3,646 | 14,077 | 1,303 |
| 1974 | 60,340 | 53,042 | 7,298 | 7,989 | 2,235 | 30,921 | 3,663 | 14,132 | 1,400 |
| 1975 | 61,063 | 53,626 | 7,437 | 8,835 | 2,350 | 30,487 | 3,687 | 14,304 | 1,400 |
| 1976 | 60,507 | 52,969 | 7,538 | 8,653 | 2,359 | 30,006 | 3,762 | 14,310 | 1,417 |
| 1977 | 59,955 | 52,423 | 7,532 | 8,847 | 2,437 | 29,336 | 3,615 | 14,240 | 1,480 |
| 1978 | 58,948 | 51,395 | 7,553 | 8,784 | 2,475 | 28,455 | 3,606 | 14,156 | 1,472 |
| **Intermediate alternative projections** | | | | | | | | | |
| 1979 | 58,129 | 50,587 | 7,542 | 9,030 | 2,478 | 27,822 | 3,554 | 13,735 | 1,510 |
| 1980 | 57,382 | 49,820 | 7,562 | 9,124 | 2,487 | 27,389 | 3,585 | 13,307 | 1,490 |
| 1981 | 56,602 | 49,058 | 7,544 | 9,200 | 2,490 | 27,037 | 3,577 | 12,821 | 1,477 |
| 1982 | 55,695 | 48,305 | 7,390 | 9,194 | 2,476 | 26,795 | 3,422 | 12,316 | 1,492 |
| 1983 | 55,381 | 47,825 | 7,556 | 9,159 | 2,454 | 26,601 | 3,672 | 12,065 | 1,430 |
| 1984 | 55,122 | 47,563 | 7,559 | 9,072 | 2,420 | 26,428 | 3,780 | 12,063 | 1,359 |
| 1985 | 55,111 | 47,522 | 7,589 | 8,974 | 2,384 | 26,448 | 3,809 | 12,100 | 1,396 |
| 1986 | 55,292 | 47,652 | 7,640 | 8,872 | 2,343 | 26,851 | 3,824 | 11,929 | 1,473 |
| 1987 | 55,576 | 47,866 | 7,710 | 8,793 | 2,311 | 27,495 | 3,874 | 11,578 | 1,525 |
| 1988 | 55,938 | 48,128 | 7,810 | 8,754 | 2,294 | 28,259 | 3,964 | 11,115 | 1,552 |
| **Low alternative projections** | | | | | | | | | |
| 1979 | 57,760 | 50,303 | 7,457 | 8,746 | 2,393 | 27,822 | 3,554 | 13,735 | 1,510 |
| 1980 | 56,840 | 49,404 | 7,436 | 8,708 | 2,361 | 27,389 | 3,585 | 13,307 | 1,490 |
| 1981 | 55,897 | 48,517 | 7,380 | 8,659 | 2,326 | 27,037 | 3,577 | 12,821 | 1,477 |
| 1982 | 54,842 | 47,651 | 7,191 | 8,540 | 2,277 | 26,795 | 3,422 | 12,316 | 1,492 |
| 1983 | 54,386 | 47,060 | 7,326 | 8,394 | 2,224 | 26,601 | 3,672 | 12,065 | 1,430 |
| 1984 | 54,004 | 46,703 | 7,301 | 8,212 | 2,162 | 26,428 | 3,780 | 12,063 | 1,359 |
| 1985 | 53,881 | 46,577 | 7,304 | 8,029 | 2,099 | 26,448 | 3,809 | 12,100 | 1,396 |
| 1986 | 53,963 | 46,625 | 7,338 | 7,845 | 2,041 | 26,851 | 3,824 | 11,929 | 1,473 |
| 1987 | 54,156 | 46,766 | 7,390 | 7,693 | 1,991 | 27,495 | 3,874 | 11,578 | 1,525 |
| 1988 | 54,417 | 46,948 | 7,469 | 7,574 | 1,953 | 28,259 | 3,964 | 11,115 | 1,552 |
| **High alternative projections** | | | | | | | | | |
| 1979 | 58,799 | 51,106 | 7,693 | 9,549 | 2,629 | 27,822 | 3,554 | 13,735 | 1,510 |
| 1980 | 58,339 | 50,566 | 7,773 | 9,870 | 2,698 | 27,389 | 3,585 | 13,307 | 1,490 |
| 1981 | 57,887 | 50,063 | 7,824 | 10,205 | 2,770 | 27,037 | 3,577 | 12,821 | 1,477 |
| 1982 | 57,306 | 49,570 | 7,736 | 10,459 | 2,822 | 26,795 | 3,422 | 12,316 | 1,492 |
| 1983 | 57,319 | 49,350 | 7,969 | 10,684 | 2,867 | 26,601 | 3,672 | 12,065 | 1,430 |
| 1984 | 57,382 | 49,345 | 8,037 | 10,854 | 2,898 | 26,428 | 3,780 | 12,063 | 1,359 |
| 1985 | 57,682 | 49,555 | 8,127 | 11,007 | 2,922 | 26,448 | 3,809 | 12,100 | 1,396 |
| 1986 | 58,168 | 49,929 | 8,239 | 11,149 | 2,942 | 26,851 | 3,824 | 11,929 | 1,473 |
| 1987 | 58,759 | 50,389 | 8,370 | 11,316 | 2,971 | 27,495 | 3,874 | 11,578 | 1,525 |
| 1988 | 59,429 | 50,901 | 8,528 | 11,527 | 3,012 | 28,259 | 3,964 | 11,115 | 1,552 |

[1]Grade K-8 and 9-12 enrollment numbers are from table 4. Enrollment of higher education numbers are from table 7.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

**Table 3.—Nursery and kindergarten enrollment, with alternative projections, by age and sex of student and by control of school: United States, fall 1968 to 1988[1]**

**(In thousands)**

| Age | Total | Public | | | | | Nonpublic | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | 3 Years old | 4 Years old | 5 Years old | 6 Years old | Total | 3 Years old | 4 Years old | 5 Years old | 6 Years old |
| 1968 | 4,071 | 2,963 | 92 | 474 | 2,265 | 132 | 1,108 | 226 | 437 | 435 | 10 |
| 1969 | 4,136 | 2,927 | 77 | 420 | 2,268 | 162 | 1,209 | 239 | 459 | 486 | 25 |
| 1970 | 4,278 | 2,980 | 122 | 494 | 2,214 | 150 | 1,298 | 332 | 512 | 429 | 25 |
| 1971 | 4,330 | 3,007 | 107 | 486 | 2,254 | 160 | 1,323 | 323 | 562 | 417 | 21 |
| 1972 | 4,417 | 3,036 | 150 | 532 | 2,188 | 166 | 1,381 | 385 | 588 | 387 | 21 |
| 1973 | 4,399 | 2,982 | 137 | 518 | 2,175 | 152 | 1,417 | 378 | 659 | 368 | 12 |
| 1974 | 4,858 | 3,149 | 178 | 543 | 2,280 | 148 | 1,709 | 506 | 778 | 413 | 12 |
| 1975 | 5,141 | 3,425 | 191 | 645 | 2,417 | 172 | 1,716 | 492 | 773 | 437 | 14 |
| 1976 | 4,996 | 3,418 | 180 | 608 | 2,451 | 179 | 1,578 | 422 | 740 | 389 | 27 |
| 1977 | 4,806 | 3,225 | 198 | 591 | 2,242 | 194 | 1,581 | 447 | 699 | 400 | 35 |
| 1978 | 4,813 | 3,080 | 234 | 533 | 2,114 | 199 | 1,733 | 525 | 780 | 397 | 31 |
| **Intermediate alternative projections[2]** | | | | | | | | | | | |
| 1979 | 4,774 | 3,071 | 228 | 568 | 2,088 | 187 | 1,703 | 504 | 790 | 380 | 29 |
| 1980 | 4,890 | 3,136 | 245 | 566 | 2,142 | 183 | 1,754 | 533 | 803 | 390 | 28 |
| 1981 | 4,986 | 3,158 | 265 | 583 | 2,123 | 187 | 1,828 | 569 | 844 | 386 | 29 |
| 1982 | 5,176 | 3,256 | 284 | 609 | 2,179 | 184 | 1,920 | 601 | 894 | 396 | 29 |
| 1983 | 5,403 | 3,376 | 307 | 634 | 2,247 | 188 | 2,027 | 639 | 949 | 409 | 30 |
| 1984 | 5,706 | 3,540 | 334 | 673 | 2,339 | 194 | 2,166 | 689 | 1,021 | 425 | 31 |
| 1985 | 6,024 | 3,729 | 358 | 703 | 2,466 | 202 | 2,295 | 731 | 1,083 | 449 | 32 |
| 1986 | 6,290 | 3,892 | 373 | 733 | 2,574 | 212 | 2,398 | 755 | 1,142 | 468 | 33 |
| 1987 | 6,530 | 4,032 | 393 | 755 | 2,663 | 221 | 2,498 | 787 | 1,191 | 485 | 35 |
| 1988 | 6,682 | 4,114 | 404 | 773 | 2,709 | 228 | 2,568 | 805 | 1,234 | 493 | 36 |
| **Low alternative projections[2]** | | | | | | | | | | | |
| 1979 | 4,669 | 3,017 | 219 | 549 | 2,062 | 187 | 1,652 | 485 | 763 | 375 | 29 |
| 1980 | 4,723 | 3,059 | 226 | 534 | 2,116 | 183 | 1,664 | 492 | 759 | 385 | 28 |
| 1981 | 4,740 | 3,048 | 236 | 540 | 2,085 | 187 | 1,692 | 505 | 779 | 379 | 29 |
| 1982 | 4,856 | 3,108 | 247 | 550 | 2,127 | 184 | 1,748 | 523 | 809 | 387 | 29 |
| 1983 | 5,032 | 3,209 | 262 | 567 | 2,192 | 188 | 1,823 | 546 | 848 | 399 | 30 |
| 1984 | 5,249 | 3,341 | 275 | 590 | 2,282 | 194 | 1,908 | 568 | 894 | 415 | 31 |
| 1985 | 5,476 | 3,488 | 285 | 610 | 2,391 | 202 | 1,988 | 582 | 939 | 435 | 32 |
| 1986 | 5,672 | 3,623 | 292 | 622 | 2,497 | 212 | 2,049 | 591 | 971 | 454 | 33 |
| 1987 | 5,806 | 3,716 | 298 | 628 | 2,569 | 221 | 2,090 | 596 | 992 | 467 | 35 |
| 1988 | 5,892 | 3,773 | 301 | 632 | 2,612 | 228 | 2,119 | 600 | 1,008 | 475 | 36 |
| **High alternative projections[2]** | | | | | | | | | | | |
| 1979 | 4,881 | 3,117 | 242 | 587 | 2,101 | 187 | 1,764 | 536 | 817 | 382 | 29 |
| 1980 | 5,057 | 3,213 | 265 | 597 | 2,168 | 183 | 1,844 | 575 | 847 | 394 | 28 |
| 1981 | 5,205 | 3,261 | 291 | 621 | 2,162 | 187 | 1,944 | 623 | 899 | 393 | 29 |
| 1982 | 5,468 | 3,385 | 322 | 660 | 2,219 | 184 | 2,083 | 679 | 972 | 403 | 29 |
| 1983 | 5,805 | 3,554 | 357 | 708 | 2,301 | 188 | 2,251 | 744 | 1,058 | 419 | 30 |
| 1984 | 6,198 | 3,759 | 399 | 756 | 2,410 | 194 | 2,439 | 823 | 1,147 | 438 | 31 |
| 1985 | 6,570 | 3,971 | 425 | 805 | 2,539 | 202 | 2,599 | 868 | 1,237 | 462 | 32 |
| 1986 | 6,945 | 4,174 | 460 | 850 | 2,652 | 212 | 2,771 | 930 | 1,325 | 483 | 33 |
| 1987 | 7,234 | 4,332 | 488 | 880 | 2,743 | 221 | 2,902 | 979 | 1,389 | 499 | 35 |
| 1988 | 7,489 | 4,462 | 514 | 914 | 2,806 | 228 | 3,027 | 1,022 | 1,459 | 510 | 36 |

[1]Includes nursery and kindergarten enrollments in regular schools and enrollments in independent nursery schools and kindergartens.
[2]For methodological details, see appendix A, section A-1. For pri-mary asumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Pre-primary Enrollment*, and (2) U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, Nursery School and Kindergarten Enrollment*, Series P-20.

**Table 4.—Enrollment in grades K-8 and 9-12 of regular schools, by control of institution: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total public and nonpublic | | | Public | | | Nonpublic | | |
|---|---|---|---|---|---|---|---|---|---|
| | K-12 | K-8 | 9-12 | K-12 | K-8 | 9-12 | K-12 | K-8 | 9-12 |
| 1968 | 50,744 | 36,626 | 14,118 | 44,944 | 32,226 | 12,718 | 5,800 | 4,400 | 1,400 |
| 1969 | 51,119 | 36,797 | 14,322 | 45,619 | 32,597 | 13,022 | [1]5,500 | 4,200 | 1,300 |
| 1970 | 51,309 | 36,677 | 14,632 | 45,909 | 32,577 | 13,332 | 5,400 | 4,100 | 1,300 |
| 1971 | 51,181 | 36,065 | 15,116 | 46,081 | 32,265 | 13,816 | [1]5,100 | 3,800 | 1,300 |
| 1972 | 50,744 | 35,531 | 15,213 | 45,744 | 31,831 | 13,913 | [1]5,000 | 3,700 | 1,300 |
| 1973 | 50,329 | 34,953 | 15,377 | 45,429 | 31,353 | 14,077 | [1]4,900 | 3,600 | 1,300 |
| 1974 | 50,053 | 34,521 | 15,532 | 45,053 | 30,921 | 14,132 | [1]5,000 | 3,600 | 1,400 |
| 1975 | 49,791 | 34,087 | 15,704 | 44,791 | 30,487 | 14,304 | [1]5,000 | 3,600 | 1,400 |
| 1976 | 49,316 | 33,606 | 15,710 | 44,316 | 30,006 | 14,310 | 5,000 | 3,600 | 1,400 |
| 1977 | 48,577 | 32,936 | 15,640 | 43,577 | 29,336 | 14,240 | 5,000 | 3,600 | 1,400 |
| 1978 | 47,611 | 32,055 | 15,556 | 42,611 | 28,455 | 14,156 | 5,000 | 3,600 | 1,400 |
| | | | | | Projected[2] | | | | |
| 1979 | 46,657 | 31,422 | 15,235 | 41,557 | 27,822 | 13,735 | 5,100 | 3,600 | 1,500 |
| 1980 | 45,796 | 30,989 | 14,807 | 40,696 | 27,389 | 13,307 | 5,100 | 3,600 | 1,500 |
| 1981 | 44,958 | 30,637 | 14,321 | 39,858 | 27,037 | 12,821 | 5,100 | 3,600 | 1,500 |
| 1982 | 44,111 | 30,395 | 13,716 | 39,111 | 26,795 | 12,316 | 5,000 | 3,600 | 1,400 |
| 1983 | 43,766 | 30,301 | 13,465 | 38,666 | 26,601 | 12,065 | 5,100 | 3,700 | 1,400 |
| 1984 | 43,591 | 30,128 | 13,463 | 38,491 | 26,428 | 12,063 | 5,100 | 3,700 | 1,400 |
| 1985 | 43,748 | 30,248 | 13,500 | 38,548 | 26,448 | 12,100 | 5,200 | 3,800 | 1,400 |
| 1986 | 44,080 | 30,651 | 13,429 | 38,780 | 26,851 | 11,929 | 5,300 | 3,800 | 1,500 |
| 1987 | 44,473 | 31,395 | 13,078 | 39,073 | 27,495 | 11,578 | 5,400 | 3,900 | 1,500 |
| 1988 | 44,974 | 32,259 | 12,715 | 39,374 | 28,259 | 11,115 | 5,600 | 4,000 | 1,600 |

[1]Estimated.

[2]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Statistics of Public Elementary and Secondary Day Schools*, (2) *Bulletin: Selected Public and Private Elementary and Secondary Education Statistics*, October 23, 1979, and (3) *Statistics of Nonpublic Elementary and Secondary Schools*.

**Table 5.—Enrollment in regular elementary and secondary schools, by control and organizational level of institution: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total public and nonpublic | | | Public | | | Nonpublic | | |
|---|---|---|---|---|---|---|---|---|---|
| | K-12 | Elementary | Secondary | K-12 | Elementary | Secondary | K-12 | Elementary | Secondary |
| 1968 | 50,744 | 31,763 | 18,981 | 44,944 | 27,363 | 17,581 | 5,800 | 4,400 | 1,400 |
| 1969 | 51,119 | 31,655 | 19,463 | 45,619 | 27,455 | 18,163 | [1]5,500 | 4,200 | 1,300 |
| 1970 | 51,309 | 31,601 | 19,708 | 45,909 | 27,501 | 18,408 | 5,400 | 4,100 | 1,300 |
| 1971 | 51,181 | 31,488 | 19,693 | 46,081 | 27,688 | 18,393 | [1]5,100 | 3,800 | 1,300 |
| 1972 | 50,744 | 31,023 | 19,721 | 45,744 | 27,323 | 18,421 | [1]5,000 | 3,700 | 1,300 |
| 1973 | 50,329 | 30,035 | 20,295 | 45,429 | 26,435 | 18,995 | [1]4,900 | 3,600 | 1,300 |
| 1974 | 50,053 | 29,982 | 20,071 | 45,053 | 26,382 | 18,671 | [1]5,000 | 3,600 | 1,400 |
| 1975 | 49,791 | 29,240 | 20,551 | 44,791 | 25,640 | 19,151 | [1]5,000 | 3,600 | 1,400 |
| 1976 | 49,316 | 29,029 | 20,287 | 44,316 | 25,429 | 18,887 | 5,000 | 3,600 | 1,400 |
| 1977 | 48,577 | 28,554 | 20,023 | 43,577 | 24,954 | 18,623 | 5,000 | 3,600 | 1,400 |
| 1978 | 47,611 | 28,652 | 18,959 | 42,611 | 25,052 | 17,559 | 5,000 | 3,600 | 1,400 |
| | | | | | Projected[2] | | | | |
| 1979 | 46,657 | 27,575 | 19,082 | 41,557 | 23,975 | 17,582 | 5,100 | 3,600 | 1,500 |
| 1980 | 45,796 | 27,243 | 18,553 | 40,696 | 23,643 | 17,053 | 5,100 | 3,600 | 1,500 |
| 1981 | 44,958 | 26,896 | 18,062 | 39,858 | 23,296 | 16,562 | 5,100 | 3,600 | 1,500 |
| 1982 | 44,111 | 26,568 | 17,543 | 39,111 | 22,968 | 16,143 | 5,000 | 3,600 | 1,400 |
| 1983 | 43,766 | 26,451 | 17,315 | 38,666 | 22,751 | 15,915 | 5,100 | 3,700 | 1,400 |
| 1984 | 43,591 | 26,451 | 17,140 | 38,491 | 22,751 | 15,740 | 5,100 | 3,700 | 1,400 |
| 1985 | 43,748 | 26,794 | 16,954 | 38,548 | 22,994 | 15,554 | 5,200 | 3,800 | 1,400 |
| 1986 | 44,080 | 27,317 | 16,763 | 38,780 | 23,517 | 15,263 | 5,300 | 3,800 | 1,500 |
| 1987 | 44,473 | 28,056 | 16,417 | 39,073 | 24,156 | 14,917 | 5,400 | 3,900 | 1,500 |
| 1988 | 44,974 | 28,902 | 16,072 | 39,374 | 24,902 | 14,472 | 5,600 | 4,000 | 1,600 |

[1]Estimated.

[2]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Statistics of Public Elementary and Secondary Day Schools*, (2) Bulletin: *Selected Public and Private Elementary and Secondary Education Statistics*, October 23, 1979, and (3) *Statistics of Nonpublic Elementary and Secondary Schools*.

**Table 6A.—Total enrollment in all institutions of higher education, by age, sex and attendance status, with intermediate alternative projections: United States, fall 1968, 1973, 1978, 1983, and 1988**

**(In thousands)**

| Age | 1968 (Estimated) | | | 1973 (Estimated) | | | 1978 (Estimated) | | | 1983 (Intermediate projections)[1] | | | 1988 (Intermediate projections)[1] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time |
| Total | 7,513 | 5,210 | 2,303 | 9,602 | 6,189 | 3,411 | 11,259 | 6,667 | 4,592 | 11,612 | 6,733 | 4,879 | 11,047 | 6,185 | 4,862 |
| 16 and 17 years | 272 | 250 | 22 | 291 | 262 | 29 | 263 | 241 | 22 | 224 | 201 | 23 | 225 | 202 | 23 |
| 18 and 19 years | 2,419 | 2,260 | 159 | 2,526 | 2,322 | 204 | 2,755 | 2,422 | 333 | 2,587 | 2,287 | 300 | 2,335 | 2,063 | 272 |
| 20 and 21 years | 1,794 | 1,564 | 230 | 2,109 | 1,806 | 303 | 2,212 | 1,817 | 395 | 2,223 | 1,845 | 378 | 1,897 | 1,575 | 322 |
| 22 to 24 years | 1,086 | 638 | 448 | 1,585 | 970 | 615 | 1,804 | 1,131 | 673 | 1,910 | 1,178 | 732 | 1,739 | 1,072 | 667 |
| 25 to 29 years | 889 | 290 | 599 | 1,485 | 484 | 1,001 | 1,730 | 600 | 1,130 | 1,984 | 715 | 1,269 | 2,030 | 731 | 1,299 |
| 30 to 34 years | 429 | 102 | 327 | 659 | 153 | 506 | 1,038 | 268 | 770 | 1,201 | 305 | 896 | 1,338 | 340 | 998 |
| 35 years and over | 627 | 107 | 520 | 947 | 194 | 753 | 1,458 | 188 | 1,270 | 1,483 | 202 | 1,281 | 1,483 | 202 | 1,281 |
| Men | 4,478 | 3,169 | 1,309 | 5,371 | 3,579 | 1,792 | 5,640 | 3,527 | 2,113 | 5,925 | 3,641 | 2,284 | 5,631 | 3,350 | 2,281 |
| 16 and 17 years | 130 | 118 | 12 | 122 | 111 | 11 | 107 | 96 | 11 | 92 | 81 | 11 | 93 | 82 | 11 |
| 18 and 19 years | 1,306 | 1,243 | 63 | 1,299 | 1,197 | 102 | 1,326 | 1,170 | 156 | 1,257 | 1,119 | 138 | 1,134 | 1,009 | 125 |
| 20 and 21 years | 1,064 | 960 | 104 | 1,149 | 992 | 157 | 1,158 | 977 | 181 | 1,174 | 993 | 181 | 1,002 | 848 | 154 |
| 22 to 24 years | 725 | 474 | 251 | 994 | 682 | 312 | 1,027 | 694 | 333 | 1,097 | 738 | 359 | 999 | 672 | 327 |
| 25 to 29 years | 669 | 239 | 430 | 993 | 368 | 625 | 984 | 377 | 607 | 1,152 | 461 | 691 | 1,178 | 471 | 707 |
| 30 to 34 years | 268 | 70 | 198 | 388 | 107 | 281 | 523 | 133 | 390 | 621 | 163 | 458 | 693 | 182 | 511 |
| 35 years and over | 317 | 65 | 252 | 428 | 123 | 305 | 515 | 81 | 434 | 532 | 86 | 446 | 532 | 86 | 446 |
| Women | 3,035 | 2,041 | 994 | 4,231 | 2,612 | 1,621 | 5,619 | 3,140 | 2,479 | 5,687 | 3,092 | 2,595 | 5,416 | 2,835 | 2,581 |
| 16 and 17 years | 142 | 132 | 10 | 169 | 151 | 18 | 156 | 145 | 11 | 132 | 120 | 12 | 132 | 120 | 12 |
| 18 and 19 years | 1,113 | 1,017 | 96 | 1,227 | 1,125 | 102 | 1,429 | 1,252 | 177 | 1,330 | 1,168 | 162 | 1,201 | 1,054 | 147 |
| 20 and 21 years | 730 | 604 | 126 | 960 | 814 | 146 | 1,054 | 840 | 214 | 1,049 | 852 | 197 | 895 | 727 | 168 |
| 22 to 24 years | 361 | 164 | 197 | 591 | 288 | 303 | 777 | 437 | 340 | 813 | 440 | 373 | 740 | 400 | 340 |
| 25 to 29 years | 220 | 51 | 169 | 492 | 116 | 376 | 746 | 223 | 523 | 832 | 254 | 578 | 852 | 260 | 592 |
| 30 to 34 years | 161 | 32 | 129 | 271 | 46 | 225 | 514 | 135 | 379 | 580 | 142 | 438 | 645 | 158 | 487 |
| 35 years and over | 310 | 42 | 268 | 519 | 71 | 448 | 942 | 107 | 835 | 951 | 116 | 835 | 951 | 116 | 835 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*, and (2) U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, School Enrollment - Social and Economic Characteristics of Students*, Series P-20.

**Table 6B. —Total enrollment in all institutions of higher education, by age, sex and attendance status, with low alternative projections: United States, fall 1968, 1973, 1978, 1983, and 1988**

**(In thousands)**

| Age | 1968 (Estimated) | | | 1973 (Estimated) | | | 1978 (Estimated) | | | 1983 (Low projections)[1] | | | 1988 (Low projections)[1] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time |
| Total | 7,513 | 5,210 | 2,303 | 9,602 | 6,189 | 3,411 | 11,259 | 6,667 | 4,592 | 10,618 | 5,998 | 4,620 | 9,529 | 5,152 | 4,377 |
| 16 and 17 years | 272 | 250 | 22 | 291 | 262 | 29 | 263 | 241 | 22 | 202 | 179 | 23 | 200 | 177 | 23 |
| 18 and 19 years | 2,419 | 2,260 | 159 | 2,526 | 2,322 | 204 | 2,755 | 2,422 | 333 | 2,376 | 2,076 | 300 | 2,035 | 1,763 | 272 |
| 20 and 21 years | 1,794 | 1,564 | 230 | 2,109 | 1,806 | 303 | 2,212 | 1,817 | 395 | 1,955 | 1,586 | 369 | 1,550 | 1,248 | 302 |
| 22 to 24 years | 1,086 | 638 | 448 | 1,585 | 970 | 615 | 1,804 | 1,131 | 673 | 1,800 | 1,118 | 682 | 1,548 | 984 | 564 |
| 22 to 29 years | 889 | 290 | 599 | 1,485 | 484 | 1,001 | 1,730 | 600 | 1,130 | 1,797 | 601 | 1,196 | 1,694 | 557 | 1,137 |
| 30 to 34 years | 429 | 102 | 327 | 659 | 153 | 506 | 1,038 | 268 | 770 | 1,126 | 276 | 850 | 1,169 | 274 | 895 |
| 35 years and over | 627 | 107 | 520 | 947 | 194 | 753 | 1,458 | 188 | 1,270 | 1,362 | 162 | 1,200 | 1,333 | 149 | 1,184 |
| Men | 4,478 | 3,169 | 1,309 | 5,371 | 3,579 | 1,792 | 5,640 | 3,527 | 2,113 | 5,365 | 3,203 | 2,162 | 4,784 | 2,751 | 2,033 |
| 16 and 17 years | 130 | 118 | 12 | 122 | 111 | 11 | 107 | 96 | 11 | 82 | 71 | 11 | 82 | 71 | 11 |
| 18 and 19 years | 1,306 | 1,243 | 63 | 1,299 | 1,197 | 102 | 1,326 | 1,170 | 156 | 1,146 | 1,008 | 138 | 980 | 855 | 125 |
| 20 and 21 years | 1,064 | 960 | 104 | 1,149 | 992 | 157 | 1,158 | 977 | 181 | 1,025 | 853 | 172 | 811 | 671 | 140 |
| 22 to 24 years | 725 | 474 | 251 | 994 | 682 | 312 | 1,027 | 694 | 333 | 1,024 | 686 | 338 | 883 | 604 | 279 |
| 25 to 29 years | 669 | 239 | 430 | 993 | 368 | 625 | 984 | 377 | 607 | 1,021 | 378 | 643 | 961 | 350 | 611 |
| 30 to 34 years | 268 | 70 | 198 | 388 | 107 | 281 | 523 | 133 | 390 | 569 | 137 | 432 | 591 | 136 | 455 |
| 35 years and over | 317 | 65 | 252 | 428 | 123 | 305 | 515 | 81 | 434 | 498 | 70 | 428 | 476 | 64 | 412 |
| Women | 3,035 | 2,041 | 994 | 4,231 | 2,612 | 1,621 | 5,619 | 3,140 | 2,479 | 5,253 | 2,795 | 2,458 | 4,745 | 2,401 | 2,344 |
| 16 and 17 years | 142 | 132 | 10 | 169 | 151 | 18 | 156 | 145 | 11 | 120 | 108 | 12 | 118 | 106 | 12 |
| 18 and 19 years | 1,113 | 1,017 | 96 | 1,227 | 1,125 | 102 | 1,429 | 1,252 | 177 | 1,230 | 1,068 | 162 | 1,055 | 908 | 147 |
| 20 and 21 years | 730 | 604 | 126 | 960 | 814 | 146 | 1,054 | 840 | 214 | 930 | 733 | 197 | 739 | 577 | 162 |
| 22 to 24 years | 361 | 164 | 197 | 591 | 288 | 303 | 777 | 437 | 340 | 776 | 432 | 344 | 665 | 380 | 285 |
| 25 to 29 years | 220 | 51 | 169 | 492 | 116 | 376 | 746 | 223 | 523 | 776 | 223 | 553 | 733 | 207 | 526 |
| 30 to 34 years | 161 | 32 | 129 | 271 | 46 | 225 | 514 | 135 | 379 | 557 | 139 | 418 | 578 | 138 | 440 |
| 35 years and over | 310 | 42 | 268 | 519 | 71 | 448 | 942 | 107 | 835 | 864 | 92 | 772 | 857 | 85 | 772 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*, and (2) U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, School Enrollment - Social and Economic Characteristics of Students*, Series P-20.

**Table 6C.—Total enrollment in all institutions of higher education, by age, sex and attendance status, with high alternative projections: United States, fall 1968, 1973, 1978, 1983, and 1988**

**(In thousands)**

| Age | 1968 (Estimated) | | | 1973 (Estimated) | | | 1978 (Estimated) | | | 1983 (High projections)[1] | | | 1988 (High projections)[1] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time | Total | Full-time | Part-time |
| Total | 7,513 | 5,211 | 2,303 | 9,602 | 6,189 | 3,411 | 11,259 | 6,667 | 4,592 | 13,553 | 7,805 | 5,748 | 14,535 | 7,991 | 6,544 |
| 16 and 17 years | 272 | 250 | 22 | 291 | 262 | 29 | 263 | 241 | 22 | 258 | 227 | 31 | 280 | 245 | 35 |
| 18 and 19 years | 2,419 | 2,260 | 159 | 2,526 | 2,322 | 204 | 2,755 | 2,422 | 333 | 2,846 | 2,504 | 342 | 2,759 | 2,404 | 355 |
| 20 and 21 years | 1,794 | 1,564 | 230 | 2,109 | 1,806 | 303 | 2,212 | 1,817 | 395 | 2,427 | 2,006 | 421 | 2,229 | 1,845 | 384 |
| 22 to 24 years | 1,086 | 638 | 448 | 1,585 | 970 | 615 | 1,804 | 1,131 | 673 | 2,153 | 1,354 | 799 | 2,122 | 1,358 | 764 |
| 25 to 29 years | 889 | 290 | 599 | 1,485 | 484 | 1,001 | 1,730 | 600 | 1,130 | 2,490 | 1,033 | 1,457 | 2,914 | 1,274 | 1,640 |
| 30 to 34 years | 429 | 102 | 327 | 659 | 153 | 506 | 1,038 | 268 | 770 | 1,504 | 387 | 1,117 | 1,954 | 508 | 1,446 |
| 35 years and over | 627 | 107 | 520 | 947 | 194 | 753 | 1,458 | 188 | 1,270 | 1,875 | 294 | 1,581 | 2,277 | 357 | 1,920 |
| Men | 4,478 | 3,169 | 1,309 | 5,371 | 3,579 | 1,793 | 5,640 | 3,527 | 2,113 | 6,833 | 4,189 | 2,644 | 7,217 | 4,327 | 2,890 |
| 16 and 17 years | 130 | 118 | 12 | 122 | 111 | 11 | 107 | 96 | 11 | 113 | 102 | 11 | 132 | 121 | 11 |
| 18 and 19 years | 1,306 | 1,243 | 63 | 1,299 | 1,197 | 102 | 1,326 | 1,170 | 156 | 1,402 | 1,233 | 169 | 1,406 | 1,225 | 181 |
| 20 and 21 years | 1,064 | 960 | 104 | 1,149 | 992 | 157 | 1,158 | 977 | 181 | 1,271 | 1,063 | 208 | 1,188 | 994 | 194 |
| 22 to 24 years | 725 | 474 | 251 | 994 | 682 | 312 | 1,027 | 694 | 333 | 1,155 | 776 | 379 | 1,105 | 750 | 355 |
| 25 to 29 years | 669 | 239 | 430 | 993 | 368 | 625 | 984 | 377 | 607 | 1,427 | 659 | 768 | 1,611 | 789 | 822 |
| 30 to 34 years | 268 | 70 | 198 | 388 | 107 | 281 | 523 | 133 | 390 | 737 | 223 | 514 | 909 | 290 | 619 |
| 35 years and over | 317 | 65 | 252 | 428 | 123 | 305 | 515 | 81 | 434 | 728 | 133 | 595 | 866 | 158 | 708 |
| Women | 3,035 | 2,042 | 994 | 4,231 | 2,612 | 1,621 | 5,619 | 3,140 | 2,479 | 6,720 | 3,616 | 3,104 | 7,318 | 3,664 | 3,654 |
| 16 and 17 years | 142 | 132 | 10 | 169 | 151 | 18 | 156 | 145 | 11 | 145 | 125 | 20 | 148 | 124 | 24 |
| 18 and 19 years | 1,113 | 1,017 | 96 | 1,227 | 1,125 | 102 | 1,429 | 1,252 | 177 | 1,444 | 1,271 | 173 | 1,353 | 1,179 | 174 |
| 20 and 21 years | 730 | 604 | 126 | 960 | 814 | 146 | 1,054 | 840 | 214 | 1,156 | 943 | 213 | 1,041 | 851 | 190 |
| 22 to 24 years | 361 | 164 | 197 | 591 | 288 | 303 | 777 | 437 | 340 | 998 | 578 | 420 | 1,017 | 608 | 409 |
| 25 to 29 years | 220 | 51 | 169 | 492 | 116 | 376 | 746 | 223 | 523 | 1,063 | 374 | 689 | 1,303 | 485 | 818 |
| 30 to 34 years | 161 | 32 | 129 | 271 | 46 | 225 | 514 | 135 | 379 | 767 | 164 | 603 | 1,045 | 218 | 827 |
| 35 years and over | 310 | 42 | 268 | 519 | 71 | 448 | 942 | 107 | 835 | 1,147 | 161 | 986 | 1,411 | 199 | 1,212 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*, and (2) U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, School Enrollment - Social and Economic Characteristics of Students*, Series P-20.

**Table7.—Total enrollment in all institutions of higher education, with alternative projections, by sex and attendance status of student and control of institution: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total enrollment | Sex | | Attendance status | | Control | |
|---|---|---|---|---|---|---|---|
| | | Men | Women | Full-time | Part-time | Public | Private |
| 1968 | 7,513 | 4,478 | 3,035 | 5,210 | 2,303 | 5,431 | 2,082 |
| 1969 | 8,005 | 4,746 | 3,258 | 5,499 | 2,506 | 5,897 | 2,108 |
| 1970 | 8,581 | 5,044 | 3,537 | 5,815 | 2,766 | 6,428 | 2,153 |
| 1971 | 8,949 | 5,207 | 3,742 | 6,077 | 2,871 | 6,804 | 2,144 |
| 1972 | 9,215 | 5,239 | 3,976 | 6,072 | 3,142 | 7,071 | 2,144 |
| 1973 | 9,602 | 5,371 | 4,231 | 6,189 | 3,413 | 7,420 | 2,183 |
| 1974 | 10,224 | 5,622 | 4,601 | 6,370 | 3,853 | 7,989 | 2,235 |
| 1975 | 11,185 | 6,149 | 5,036 | 6,841 | 4,344 | 8,835 | 2,350 |
| 1976 | 11,012 | 5,811 | 5,201 | 6,717 | 4,295 | 8,653 | 2,359 |
| 1977 | 11,286 | 5,789 | 5,497 | 6,793 | 4,493 | 8,847 | 2,437 |
| 1978 | 11,259 | 5,640 | 5,619 | 6,667 | 4,592 | 8,784 | 2,475 |
| | | | | **Intermediate alternative projections[1]** | | | |
| 1979 | 11,508 | 5,845 | 5,663 | 6,817 | 4,691 | 9,030 | 2,478 |
| 1980 | 11,611 | 5,907 | 5,704 | 6,847 | 4,764 | 9,124 | 2,487 |
| 1981 | 11,690 | 5,954 | 5,736 | 6,853 | 4,837 | 9,200 | 2,490 |
| 1982 | 11,670 | 5,948 | 5,722 | 6,815 | 4,855 | 9,194 | 2,476 |
| 1983 | 11,613 | 5,925 | 5,688 | 6,732 | 4,881 | 9,159 | 2,454 |
| 1984 | 11,492 | 5,868 | 5,624 | 6,601 | 4,891 | 9,072 | 2,420 |
| 1985 | 11,358 | 5,802 | 5,556 | 6,460 | 4,898 | 8,974 | 2,384 |
| 1986 | 11,215 | 5,729 | 5,486 | 6,321 | 4,894 | 8,872 | 2,343 |
| 1987 | 11,104 | 5,667 | 5,437 | 6,225 | 4,879 | 8,793 | 2,311 |
| 1988 | 11,048 | 5,631 | 5,417 | 6,185 | 4,863 | 8,754 | 2,294 |
| | | | | **Low alternative projections[1]** | | | |
| 1979 | 11,139 | 5,643 | 5,496 | 6,549 | 4,590 | 8,746 | 2,393 |
| 1980 | 11,069 | 5,601 | 5,468 | 6,441 | 4,628 | 8,708 | 2,361 |
| 1981 | 10,985 | 5,555 | 5,430 | 6,323 | 4,662 | 8,659 | 2,326 |
| 1982 | 10,817 | 5,466 | 5,351 | 6,175 | 4,642 | 8,540 | 2,277 |
| 1983 | 10,618 | 5,364 | 5,254 | 5,998 | 4,620 | 8,394 | 2,224 |
| 1984 | 10,374 | 5,240 | 5,134 | 5,788 | 4,586 | 8,212 | 2,162 |
| 1985 | 10,128 | 5,114 | 5,014 | 5,582 | 4,546 | 8,029 | 2,099 |
| 1986 | 9,886 | 4,984 | 4,902 | 5,391 | 4,495 | 7,845 | 2,041 |
| 1987 | 9,684 | 4,873 | 4,811 | 5,245 | 4,439 | 7,693 | 1,991 |
| 1988 | 9,527 | 4,784 | 4,743 | 5,152 | 4,375 | 7,574 | 1,953 |
| | | | | **High alternative projections[1]** | | | |
| 1979 | 12,178 | 6,185 | 5,993 | 7,212 | 4,966 | 9,549 | 2,629 |
| 1980 | 12,568 | 6,381 | 6,187 | 7,413 | 5,155 | 9,870 | 2,698 |
| 1981 | 12,975 | 6,572 | 6,403 | 7,589 | 5,386 | 10,205 | 2,770 |
| 1982 | 13,281 | 6,709 | 6,572 | 7,720 | 5,561 | 10,459 | 2,822 |
| 1983 | 13,551 | 6,831 | 6,720 | 7,803 | 5,748 | 10,684 | 2,867 |
| 1984 | 13,752 | 6,915 | 6,837 | 7,830 | 5,922 | 10,854 | 2,898 |
| 1985 | 13,929 | 6,984 | 6,945 | 7,837 | 6,092 | 11,007 | 2,922 |
| 1986 | 14,091 | 7,043 | 7,048 | 7,841 | 6,250 | 11,149 | 2,942 |
| 1987 | 14,287 | 7,115 | 7,172 | 7,886 | 6,401 | 11,316 | 2,971 |
| 1988 | 14,539 | 7,219 | 7,320 | 7,991 | 6,548 | 11,527 | 3,012 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 7A.—Total enrollment in 4-year institutions of higher education, with alternative projections, by sex and attendance status of student and control of institution: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total enrollment | Sex | | Attendance status | | Control | |
|---|---|---|---|---|---|---|---|
| | | Men | Women | Full-time | Part-time | Public | Private |
| 1968 | 5,721 | 3,387 | 2,333 | 4,235 | 1,486 | 3,784 | 1,937 |
| 1969 | 6,028 | 3,555 | 2,473 | 4,442 | 1,586 | 4,050 | 1,978 |
| 1970 | 6,358 | 3,726 | 2,631 | 4,650 | 1,708 | 4,326 | 2,032 |
| 1971 | 6,463 | 3,758 | 2,705 | 4,787 | 1,676 | 4,438 | 2,024 |
| 1972 | 6,459 | 3,695 | 2,764 | 4,732 | 1,727 | 4,430 | 2,029 |
| 1973 | 6,590 | 3,718 | 2,872 | 4,757 | 1,833 | 4,530 | 2,060 |
| 1974 | 6,820 | 3,791 | 3,029 | 4,861 | 1,959 | 4,703 | 2,117 |
| 1975 | 7,215 | 3,984 | 3,231 | 5,080 | 2,134 | 4,998 | 2,217 |
| 1976 | 7,129 | 3,831 | 3,298 | 5,053 | 2,076 | 4,902 | 2,227 |
| 1977 | 7,242 | 3,823 | 3,419 | 5,138 | 2,104 | 4,945 | 2,297 |
| 1978 | 7,232 | 3,756 | 3,476 | 5,109 | 2,123 | 4,912 | 2,320 |
| | | | **Intermediate alternative projections[1]** | | | | |
| 1979 | 7,292 | 3,857 | 3,435 | 5,114 | 2,178 | 4,971 | 2,321 |
| 1980 | 7,302 | 3,880 | 3,422 | 5,113 | 2,189 | 4,976 | 2,326 |
| 1981 | 7,309 | 3,898 | 3,411 | 5,103 | 2,206 | 4,981 | 2,328 |
| 1982 | 7,258 | 3,882 | 3,376 | 5,058 | 2,200 | 4,945 | 2,313 |
| 1983 | 7,187 | 3,855 | 3,332 | 4,985 | 2,202 | 4,896 | 2,291 |
| 1984 | 7,082 | 3,808 | 3,274 | 4,883 | 2,199 | 4,823 | 2,259 |
| 1985 | 6,968 | 3,754 | 3,214 | 4,771 | 2,197 | 4,744 | 2,224 |
| 1986 | 6,846 | 3,693 | 3,153 | 4,654 | 2,192 | 4,661 | 2,185 |
| 1987 | 6,751 | 3,644 | 3,107 | 4,570 | 2,181 | 4,596 | 2,155 |
| 1988 | 6,694 | 3,613 | 3,081 | 4,524 | 2,170 | 4,557 | 2,137 |
| | | | **Low alternative projections[1]** | | | | |
| 1979 | 7,042 | 3,708 | 3,334 | 4,911 | 2,131 | 4,802 | 2,240 |
| 1980 | 6,935 | 3,659 | 3,276 | 4,808 | 2,127 | 4,727 | 2,208 |
| 1981 | 6,828 | 3,611 | 3,217 | 4,704 | 2,124 | 4,655 | 2,173 |
| 1982 | 6,680 | 3,539 | 3,141 | 4,580 | 2,100 | 4,554 | 2,126 |
| 1983 | 6,518 | 3,459 | 3,059 | 4,438 | 2,080 | 4,442 | 2,076 |
| 1984 | 6,336 | 3,370 | 2,966 | 4,278 | 2,058 | 4,317 | 2,019 |
| 1985 | 6,152 | 3,277 | 2,875 | 4,118 | 2,034 | 4,193 | 1,959 |
| 1986 | 5,974 | 3,182 | 2,792 | 3,967 | 2,007 | 4,070 | 1,904 |
| 1987 | 5,824 | 3,102 | 2,722 | 3,846 | 1,978 | 3,968 | 1,856 |
| 1988 | 5,707 | 3,038 | 2,669 | 3,764 | 1,943 | 3,889 | 1,818 |
| | | | **High alternative projections[1]** | | | | |
| 1979 | 7,719 | 4,073 | 3,646 | 5,410 | 2,309 | 5,257 | 2,462 |
| 1980 | 7,909 | 4,182 | 3,727 | 5,653 | 2,373 | 5,385 | 2,524 |
| 1981 | 8,111 | 4,292 | 3,819 | 5,653 | 2,458 | 5,520 | 2,591 |
| 1982 | 8,254 | 4,368 | 3,886 | 5,733 | 2,521 | 5,617 | 2,637 |
| 1983 | 8,374 | 4,434 | 3,940 | 5,783 | 2,591 | 5,697 | 2,677 |
| 1984 | 8,456 | 4,477 | 3,979 | 5,798 | 2,658 | 5,750 | 2,706 |
| 1985 | 8,521 | 4,510 | 4,011 | 5,796 | 2,725 | 5,793 | 2,728 |
| 1986 | 8,574 | 4,534 | 4,040 | 5,786 | 2,788 | 5,828 | 2,746 |
| 1987 | 8,651 | 4,568 | 4,083 | 5,803 | 2,848 | 5,879 | 2,772 |
| 1988 | 8,766 | 4,625 | 4,141 | 5,863 | 2,903 | 5,958 | 2,808 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 7B.—Total enrollment in 2-year institutions of higher education, with alternative projections, by sex and attendance status of student and control of institution: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total enrollment | Sex | | Attendance status | | Control | |
|---|---|---|---|---|---|---|---|
| | | Men | Women | Full-time | Part-time | Public | Private |
| 1968 | 1,792 | 1,090 | 702 | 976 | 817 | 1,646 | 146 |
| 1969 | 1,977 | 1,191 | 786 | 1,057 | 920 | 1,847 | 130 |
| 1970 | 2,223 | 1,317 | 906 | 1,165 | 1,058 | 2,102 | 121 |
| 1971 | 2,486 | 1,449 | 1,037 | 1,291 | 1,195 | 2,366 | 120 |
| 1972 | 2,756 | 1,544 | 1,212 | 1,340 | 1,416 | 2,641 | 115 |
| 1973 | 3,012 | 1,653 | 1,360 | 1,432 | 1,580 | 2,890 | 122 |
| 1974 | 3,404 | 1,832 | 1,572 | 1,509 | 1,895 | 3,285 | 119 |
| 1975 | 3,970 | 2,165 | 1,805 | 1,761 | 2,209 | 3,836 | 134 |
| 1976 | 3,883 | 1,980 | 1,903 | 1,664 | 2,219 | 3,752 | 132 |
| 1977 | 4,042 | 1,965 | 2,077 | 1,654 | 2,388 | 3,902 | 140 |
| 1978 | 4,028 | 1,885 | 2,143 | 1,558 | 2,470 | 3,873 | 155 |
| **Intermediate alternative projections[1]** | | | | | | | |
| 1979 | 4,216 | 1,988 | 2,228 | 1,703 | 2,513 | 4,059 | 157 |
| 1980 | 4,309 | 2,027 | 2,282 | 1,734 | 2,575 | 4,148 | 161 |
| 1981 | 4,381 | 2,056 | 2,325 | 1,750 | 2,631 | 4,219 | 162 |
| 1982 | 4,412 | 2,066 | 2,346 | 1,757 | 2,655 | 4,249 | 163 |
| 1983 | 4,426 | 2,070 | 2,356 | 1,747 | 2,679 | 4,263 | 163 |
| 1984 | 4,410 | 2,060 | 2,350 | 1,718 | 2,692 | 4,249 | 161 |
| 1985 | 4,390 | 2,048 | 2,342 | 1,689 | 2,701 | 4,230 | 160 |
| 1986 | 4,369 | 2,036 | 2,333 | 1,667 | 2,702 | 4,211 | 158 |
| 1987 | 4,353 | 2,023 | 2,330 | 1,655 | 2,698 | 4,197 | 156 |
| 1988 | 4,354 | 2,018 | 2,336 | 1,661 | 2,693 | 4,197 | 157 |
| **Low alternative projections[1]** | | | | | | | |
| 1979 | 4,097 | 1,935 | 2,162 | 1,638 | 2,459 | 3,944 | 153 |
| 1980 | 4,134 | 1,942 | 2,192 | 1,633 | 2,501 | 3,981 | 153 |
| 1981 | 4,157 | 1,944 | 2,213 | 1,619 | 2,538 | 4,004 | 153 |
| 1982 | 4,137 | 1,927 | 2,210 | 1,595 | 2,542 | 3,986 | 151 |
| 1983 | 4,100 | 1,905 | 2,195 | 1,560 | 2,540 | 3,952 | 148 |
| 1984 | 4,038 | 1,870 | 2,168 | 1,510 | 2,528 | 3,895 | 143 |
| 1985 | 3,976 | 1,837 | 2,139 | 1,464 | 2,512 | 3,836 | 140 |
| 1986 | 3,912 | 1,802 | 2,110 | 1,424 | 2,488 | 3,775 | 137 |
| 1987 | 3,860 | 1,771 | 2,089 | 1,399 | 2,461 | 3,725 | 135 |
| 1988 | 3,820 | 1,746 | 2,074 | 1,388 | 2,432 | 3,685 | 135 |
| **High alternative projections[1]** | | | | | | | |
| 1979 | 4,459 | 2,112 | 2,347 | 1,802 | 2,657 | 4,292 | 167 |
| 1980 | 4,659 | 2,199 | 2,460 | 1,877 | 2,782 | 4,485 | 174 |
| 1981 | 4,864 | 2,280 | 2,584 | 1,936 | 2,928 | 4,685 | 179 |
| 1982 | 5,027 | 2,341 | 2,686 | 1,987 | 3,040 | 4,842 | 185 |
| 1983 | 5,177 | 2,397 | 2,780 | 2,020 | 3,157 | 4,987 | 190 |
| 1984 | 5,296 | 2,438 | 2,858 | 2,032 | 3,264 | 5,104 | 192 |
| 1985 | 5,408 | 2,474 | 2,934 | 2,041 | 3,367 | 5,214 | 194 |
| 1986 | 5,517 | 2,509 | 3,008 | 2,055 | 3,462 | 5,321 | 196 |
| 1987 | 5,636 | 2,547 | 3,089 | 2,083 | 3,553 | 5,437 | 199 |
| 1988 | 5,773 | 2,594 | 3,179 | 2,128 | 3,645 | 5,569 | 204 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 8.—Total enrollment in all institutions of higher education, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 7,513 | 3,169 | 1,309 | 2,041 | 994 |
| 1969 | 8,005 | 3,335 | 1,411 | 2,162 | 1,095 |
| 1970 | 8,581 | 3,505 | 1,540 | 2,311 | 1,225 |
| 1971 | 8,949 | 3,630 | 1,578 | 2,447 | 1,293 |
| 1972 | 9,215 | 3,557 | 1,681 | 2,514 | 1,461 |
| 1973 | 9,602 | 3,579 | 1,792 | 2,612 | 1,621 |
| 1974 | 10,224 | 3,646 | 1,976 | 2,724 | 1,877 |
| 1975 | 11,185 | 3,926 | 2,226 | 2,915 | 2,120 |
| 1976 | 11,012 | 3,704 | 2,107 | 3,014 | 2,188 |
| 1977 | 11,286 | 3,650 | 2,138 | 3,142 | 2,354 |
| 1978 | 11,259 | 3,527 | 2,113 | 3,140 | 2,479 |
| | | **Intermediate alternative projections[1]** | | | |
| 1979 | 11,508 | 3,663 | 2,182 | 3,154 | 2,509 |
| 1980 | 11,611 | 3,685 | 2,222 | 3,162 | 2,542 |
| 1981 | 11,690 | 3,694 | 2,260 | 3,159 | 2,577 |
| 1982 | 11,670 | 3,678 | 2,270 | 3,137 | 2,585 |
| 1983 | 11,613 | 3,641 | 2,284 | 3,091 | 2,597 |
| 1984 | 11,492 | 3,577 | 2,291 | 3,024 | 2,600 |
| 1985 | 11,358 | 3,505 | 2,297 | 2,955 | 2,601 |
| 1986 | 11,215 | 3,433 | 2,296 | 2,888 | 2,598 |
| 1987 | 11,104 | 3,378 | 2,289 | 2,847 | 2,590 |
| 1988 | 11,048 | 3,350 | 2,281 | 2,835 | 2,582 |
| | | **Low alternative projections[1]** | | | |
| 1979 | 11,139 | 3,486 | 2,157 | 3,063 | 2,433 |
| 1980 | 11,069 | 3,428 | 2,173 | 3,013 | 2,455 |
| 1981 | 10,985 | 3,368 | 2,187 | 2,955 | 2,475 |
| 1982 | 10,817 | 3,291 | 2,175 | 2,884 | 2,467 |
| 1983 | 10,618 | 3,202 | 2,162 | 2,796 | 2,458 |
| 1984 | 10,374 | 3,095 | 2,145 | 2,693 | 2,441 |
| 1985 | 10,128 | 2,990 | 2,124 | 2,592 | 2,422 |
| 1986 | 9,886 | 2,887 | 2,097 | 2,504 | 2,398 |
| 1987 | 9,684 | 2,806 | 2,067 | 2,439 | 2,372 |
| 1988 | 9,527 | 2,751 | 2,033 | 2,401 | 2,342 |
| | | **High alternative projections[1]** | | | |
| 1979 | 12,178 | 3,850 | 2,335 | 3,362 | 2,631 |
| 1980 | 12,568 | 3,957 | 2,424 | 3,456 | 2,731 |
| 1981 | 12,975 | 4,057 | 2,515 | 3,532 | 2,871 |
| 1982 | 13,281 | 4,132 | 2,577 | 3,588 | 2,984 |
| 1983 | 13,551 | 4,188 | 2,643 | 3,615 | 3,105 |
| 1984 | 13,752 | 4,213 | 2,702 | 3,617 | 3,220 |
| 1985 | 13,929 | 4,226 | 2,758 | 3,611 | 3,334 |
| 1986 | 14,091 | 4,237 | 2,806 | 3,604 | 3,444 |
| 1987 | 14,287 | 4,266 | 2,849 | 3,620 | 3,552 |
| 1988 | 14,539 | 4,327 | 2,892 | 3,664 | 3,656 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 8A.—Total enrollment in public 4-year institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 3,784 | 1,663 | 525 | 1,137 | 459 |
| 1969 | 4,050 | 1,754 | 577 | 1,213 | 506 |
| 1970 | 4,326 | 1,853 | 626 | 1,295 | 552 |
| 1971 | 4,438 | 1,918 | 613 | 1,355 | 553 |
| 1972 | 4,430 | 1,860 | 626 | 1,358 | 586 |
| 1973 | 4,530 | 1,851 | 658 | 1,394 | 627 |
| 1974 | 4,703 | 1,870 | 694 | 1,448 | 691 |
| 1975 | 4,998 | 1,947 | 764 | 1,522 | 767 |
| 1976 | 4,902 | 1,879 | 709 | 1,554 | 759 |
| 1977 | 4,945 | 1,873 | 696 | 1,606 | 770 |
| 1978 | 4,911 | 1,822 | 687 | 1,613 | 789 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 4,971 | 1,867 | 720 | 1,584 | 800 |
| 1980 | 4,976 | 1,873 | 728 | 1,576 | 799 |
| 1981 | 4,981 | 1,876 | 738 | 1,566 | 801 |
| 1982 | 4,945 | 1,864 | 738 | 1,547 | 796 |
| 1983 | 4,896 | 1,842 | 742 | 1,518 | 794 |
| 1984 | 4,823 | 1,808 | 744 | 1,482 | 789 |
| 1985 | 4,744 | 1,768 | 746 | 1,445 | 785 |
| 1986 | 4,661 | 1,726 | 747 | 1,407 | 781 |
| 1987 | 4,596 | 1,694 | 745 | 1,382 | 775 |
| 1988 | 4,557 | 1,676 | 743 | 1,369 | 769 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 4,802 | 1,777 | 711 | 1,538 | 776 |
| 1980 | 4,727 | 1,743 | 711 | 1,501 | 772 |
| 1981 | 4,655 | 1,709 | 713 | 1,464 | 769 |
| 1982 | 4,554 | 1,668 | 706 | 1,421 | 759 |
| 1983 | 4,442 | 1,619 | 700 | 1,373 | 750 |
| 1984 | 4,317 | 1,564 | 695 | 1,319 | 739 |
| 1985 | 4,193 | 1,508 | 688 | 1,267 | 730 |
| 1986 | 4,070 | 1,452 | 680 | 1,220 | 718 |
| 1987 | 3,968 | 1,407 | 671 | 1,183 | 707 |
| 1988 | 3,889 | 1,376 | 660 | 1,159 | 694 |
| **High alternative projections[1]** | | | | | |
| 1979 | 5,257 | 1,956 | 771 | 1,691 | 839 |
| 1980 | 5,385 | 2,004 | 796 | 1,726 | 859 |
| 1981 | 5,520 | 2,050 | 822 | 1,756 | 892 |
| 1982 | 5,617 | 2,083 | 840 | 1,776 | 918 |
| 1983 | 5,697 | 2,106 | 859 | 1,784 | 948 |
| 1984 | 5,750 | 2,114 | 878 | 1,782 | 976 |
| 1985 | 5,793 | 2,116 | 897 | 1,776 | 1,004 |
| 1986 | 5,828 | 2,114 | 913 | 1,769 | 1,032 |
| 1987 | 5,879 | 2,121 | 928 | 1,771 | 1,059 |
| 1988 | 5,958 | 2,146 | 941 | 1,787 | 1,084 |

[1]For methodological, details see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*.

**Table 8B.—Total enrollment in public 2-year institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 1,646 | 559 | 451 | 298 | 338 |
| 1969 | 1,847 | 619 | 503 | 332 | 392 |
| 1970 | 2,102 | 682 | 573 | 386 | 461 |
| 1971 | 2,366 | 746 | 642 | 448 | 529 |
| 1972 | 2,641 | 750 | 737 | 500 | 654 |
| 1973 | 2,890 | 793 | 800 | 545 | 751 |
| 1974 | 3,285 | 833 | 941 | 586 | 925 |
| 1975 | 3,836 | 989 | 1,108 | 674 | 1,066 |
| 1976 | 3,752 | 858 | 1,061 | 704 | 1,129 |
| 1977 | 3,902 | 805 | 1,098 | 739 | 1,259 |
| 1978 | 3,873 | 738 | 1,084 | 700 | 1,351 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 4,059 | 816 | 1,107 | 764 | 1,372 |
| 1980 | 4,148 | 827 | 1,133 | 782 | 1,406 |
| 1981 | 4,219 | 832 | 1,157 | 792 | 1,438 |
| 1982 | 4,249 | 833 | 1,166 | 797 | 1,453 |
| 1983 | 4,263 | 828 | 1,175 | 793 | 1,467 |
| 1984 | 4,249 | 815 | 1,179 | 779 | 1,476 |
| 1985 | 4,230 | 802 | 1,180 | 765 | 1,483 |
| 1986 | 4,211 | 792 | 1,179 | 754 | 1,486 |
| 1987 | 4,197 | 785 | 1,174 | 751 | 1,487 |
| 1988 | 4,197 | 785 | 1,169 | 756 | 1,487 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 3,944 | 777 | 1,095 | 742 | 1,330 |
| 1980 | 3,981 | 770 | 1,109 | 745 | 1,357 |
| 1981 | 4,004 | 760 | 1,121 | 741 | 1,382 |
| 1982 | 3,986 | 746 | 1,119 | 733 | 1,388 |
| 1983 | 3,952 | 730 | 1,114 | 717 | 1,391 |
| 1984 | 3,895 | 707 | 1,105 | 694 | 1,389 |
| 1985 | 3,836 | 686 | 1,094 | 672 | 1,384 |
| 1986 | 3,775 | 667 | 1,079 | 654 | 1,375 |
| 1987 | 3,725 | 654 | 1,062 | 644 | 1,365 |
| 1988 | 3,685 | 646 | 1,045 | 641 | 1,353 |
| **High alternative projections[1]** | | | | | |
| 1979 | 4,292 | 861 | 1,181 | 811 | 1,439 |
| 1980 | 4,485 | 893 | 1,234 | 848 | 1,510 |
| 1981 | 4,685 | 921 | 1,285 | 876 | 1,603 |
| 1982 | 4,842 | 944 | 1,321 | 899 | 1,678 |
| 1983 | 4,987 | 962 | 1,357 | 912 | 1,756 |
| 1984 | 5,104 | 971 | 1,388 | 914 | 1,831 |
| 1985 | 5,214 | 979 | 1,415 | 915 | 1,905 |
| 1986 | 5,321 | 989 | 1,439 | 918 | 1,975 |
| 1987 | 5,437 | 1,005 | 1,460 | 928 | 2,044 |
| 1988 | 5,569 | 1,028 | 1,482 | 947 | 2,112 |

[1]For methodological details see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*.

**Table 8C.—Total enrollment in private 4-year institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 1,937 | 883 | 318 | 553 | 185 |
| 1969 | 1,978 | 908 | 317 | 567 | 186 |
| 1970 | 2,032 | 921 | 327 | 582 | 202 |
| 1971 | 2,024 | 918 | 310 | 596 | 200 |
| 1972 | 2,029 | 904 | 305 | 609 | 210 |
| 1973 | 2,060 | 890 | 319 | 623 | 229 |
| 1974 | 2,117 | 902 | 325 | 641 | 248 |
| 1975 | 2,217 | 943 | 332 | 667 | 274 |
| 1976 | 2,227 | 921 | 322 | 699 | 286 |
| 1977 | 2,297 | 925 | 329 | 734 | 309 |
| 1978 | 2,320 | 919 | 327 | 755 | 319 |
| **Intermediate alternative projections[1]** | | | | | |
| 979 | 2,321 | 930 | 340 | 733 | 318 |
| 1980 | 2,326 | 934 | 345 | 730 | 317 |
| 1981 | 2,328 | 935 | 349 | 726 | 318 |
| 1982 | 2,313 | 930 | 350 | 717 | 316 |
| 1983 | 2,291 | 920 | 351 | 705 | 315 |
| 1984 | 2,259 | 904 | 352 | 689 | 314 |
| 1985 | 2,224 | 886 | 354 | 672 | 312 |
| 1986 | 2,185 | 866 | 354 | 655 | 310 |
| 1987 | 2,155 | 851 | 354 | 643 | 307 |
| 1988 | 2,137 | 841 | 353 | 638 | 305 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 2,240 | 884 | 336 | 712 | 308 |
| 1980 | 2,208 | 868 | 337 | 696 | 307 |
| 1981 | 2,173 | 852 | 337 | 679 | 305 |
| 1982 | 2,126 | 831 | 334 | 660 | 301 |
| 1983 | 2,076 | 808 | 332 | 638 | 298 |
| 1984 | 2,019 | 781 | 330 | 614 | 294 |
| 1985 | 1,959 | 754 | 327 | 589 | 289 |
| 1986 | 1,904 | 727 | 323 | 568 | 286 |
| 1987 | 1,856 | 705 | 319 | 551 | 281 |
| 1988 | 1,818 | 689 | 313 | 540 | 276 |
| **High alternative projections[1]** | | | | | |
| 1979 | 2,462 | 980 | 366 | 783 | 333 |
| 1980 | 2,524 | 1,005 | 377 | 801 | 341 |
| 1981 | 2,591 | 1,030 | 390 | 817 | 354 |
| 1982 | 2,637 | 1,047 | 398 | 827 | 365 |
| 1983 | 2,677 | 1,061 | 408 | 832 | 376 |
| 1984 | 2,706 | 1,068 | 417 | 834 | 387 |
| 1985 | 2,728 | 1,071 | 426 | 833 | 398 |
| 1986 | 2,746 | 1,073 | 434 | 830 | 409 |
| 1987 | 2,772 | 1,078 | 441 | 833 | 420 |
| 1988 | 2,808 | 1,090 | 448 | 840 | 430 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 8D.—Total enrollment in private 2-year institutions, with alternative projections, by sex and attendance status: United States, 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 146 | 65 | 15 | 53 | 12 |
| 1969 | 130 | 54 | 14 | 50 | 11 |
| 1970 | 121 | 49 | 14 | 48 | 10 |
| 1971 | 120 | 48 | 13 | 48 | 11 |
| 1972 | 115 | 43 | 13 | 47 | 11 |
| 1973 | 122 | 45 | 15 | 50 | 14 |
| 1974 | 119 | 41 | 16 | 49 | 13 |
| 1975 | 134 | 47 | 22 | 52 | 13 |
| 1976 | 132 | 46 | 15 | 57 | 14 |
| 1977 | 141 | 47 | 14 | 63 | 16 |
| 1978 | 155 | 48 | 15 | 72 | 20 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 157 | 50 | 15 | 73 | 19 |
| 1980 | 161 | 51 | 16 | 74 | 20 |
| 1981 | 162 | 51 | 16 | 75 | 20 |
| 1982 | 163 | 51 | 16 | 76 | 20 |
| 1983 | 163 | 51 | 16 | 75 | 21 |
| 1984 | 161 | 50 | 16 | 74 | 21 |
| 1985 | 160 | 49 | 17 | 73 | 21 |
| 1986 | 158 | 49 | 16 | 72 | 21 |
| 1987 | 156 | 48 | 16 | 71 | 21 |
| 1988 | 157 | 48 | 16 | 72 | 21 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 153 | 48 | 15 | 71 | 19 |
| 1980 | 153 | 47 | 16 | 71 | 19 |
| 1981 | 153 | 47 | 16 | 71 | 19 |
| 1982 | 151 | 46 | 16 | 70 | 19 |
| 1983 | 148 | 45 | 16 | 68 | 19 |
| 1984 | 143 | 43 | 15 | 66 | 19 |
| 1985 | 140 | 42 | 15 | 64 | 19 |
| 1986 | 137 | 41 | 15 | 62 | 19 |
| 1987 | 135 | 40 | 15 | 61 | 19 |
| 1988 | 135 | 40 | 15 | 61 | 19 |
| **High alternative projections[1]** | | | | | |
| 1979 | 167 | 53 | 17 | 77 | 20 |
| 1980 | 174 | 55 | 17 | 81 | 21 |
| 1981 | 179 | 56 | 18 | 83 | 22 |
| 1982 | 185 | 58 | 18 | 86 | 23 |
| 1983 | 190 | 59 | 19 | 87 | 25 |
| 1984 | 192 | 60 | 19 | 87 | 26 |
| 1985 | 194 | 60 | 20 | 87 | 27 |
| 1986 | 196 | 61 | 20 | 87 | 28 |
| 1987 | 199 | 62 | 20 | 88 | 29 |
| 1988 | 204 | 63 | 21 | 90 | 30 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*.

**Table 9.—Undergraduate enrollment in all institutions of higher education, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 6,476 | 2,811 | 971 | 1,930 | 764 |
| 1969 | 6,884 | 2,952 | 1,056 | 2,039 | 837 |
| 1970 | 7,376 | 3,097 | 1,157 | 2,183 | 939 |
| 1971 | 7,743 | 3,201 | 1,217 | 2,311 | 1,014 |
| 1972 | 7,941 | 3,121 | 1,308 | 2,367 | 1,145 |
| 1973 | 8,261 | 3,135 | 1,403 | 2,445 | 1,278 |
| 1974 | 8,798 | 3,191 | 1,574 | 2,535 | 1,498 |
| 1975 | 9,679 | 3,459 | 1,798 | 2,710 | 1,712 |
| 1976 | 9,429 | 3,242 | 1,660 | 2,788 | 1,739 |
| 1977 | 9,714 | 3,188 | 1,708 | 2,905 | 1,913 |
| 1978 | 9,691 | 3,072 | 1,694 | 2,895 | 2,030 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 9,892 | 3,211 | 1,734 | 2,904 | 2,043 |
| 1980 | 9,981 | 3,229 | 1,767 | 2,909 | 2,076 |
| 1981 | 10,040 | 3,233 | 1,798 | 2,901 | 2,108 |
| 1982 | 10,022 | 3,219 | 1,806 | 2,878 | 2,119 |
| 1983 | 9,958 | 3,180 | 1,817 | 2,830 | 2,131 |
| 1984 | 9,833 | 3,116 | 1,821 | 2,761 | 2,135 |
| 1985 | 9,698 | 3,046 | 1,824 | 2,691 | 2,137 |
| 1986 | 9,558 | 2,976 | 1,821 | 2,625 | 2,136 |
| 1987 | 9,457 | 2,926 | 1,814 | 2,586 | 2,131 |
| 1988 | 9,417 | 2,907 | 1,806 | 2,577 | 2,127 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 9,569 | 3,057 | 1,714 | 2,816 | 1,982 |
| 1980 | 9,506 | 3,006 | 1,729 | 2,766 | 2,005 |
| 1981 | 9,427 | 2,951 | 1,741 | 2,708 | 2,027 |
| 1982 | 9,279 | 2,883 | 1,732 | 2,640 | 2,024 |
| 1983 | 9,096 | 2,801 | 1,722 | 2,554 | 2,019 |
| 1984 | 8,868 | 2,701 | 1,706 | 2,454 | 2,007 |
| 1985 | 8,641 | 2,603 | 1,688 | 2,357 | 1,993 |
| 1986 | 8,421 | 2,509 | 1,665 | 2,272 | 1,975 |
| 1987 | 8,244 | 2,438 | 1,639 | 2,212 | 1,955 |
| 1988 | 8,120 | 2,395 | 1,612 | 2,180 | 1,933 |
| **High alternative projections[1]** | | | | | |
| 1979 | 10,421 | 3,340 | 1,853 | 3,085 | 2,143 |
| 1980 | 10,740 | 3,428 | 1,925 | 3,158 | 2,229 |
| 1981 | 11,067 | 3,507 | 1,998 | 3,213 | 2,349 |
| 1982 | 11,311 | 3,567 | 2,048 | 3,252 | 2,444 |
| 1983 | 11,511 | 3,605 | 2,099 | 3,261 | 2,546 |
| 1984 | 11,645 | 3,614 | 2,144 | 3,245 | 2,642 |
| 1985 | 11,758 | 3,611 | 2,186 | 3,223 | 2,738 |
| 1986 | 11,860 | 3,608 | 2,221 | 3,202 | 2,829 |
| 1987 | 12,006 | 3,628 | 2,253 | 3,205 | 2,920 |
| 1988 | 12,217 | 3,682 | 2,286 | 3,240 | 3,009 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*.

**Table 9A.—Undergraduate enrollment in public 4-year institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 3,136 | 1,456 | 322 | 1,065 | 293 |
| 1969 | 3,313 | 1,529 | 346 | 1,130 | 308 |
| 1970 | 3,526 | 1,612 | 374 | 1,208 | 332 |
| 1971 | 3,642 | 1,662 | 377 | 1,264 | 339 |
| 1972 | 3,583 | 1,602 | 378 | 1,261 | 342 |
| 1973 | 3,634 | 1,587 | 399 | 1,284 | 364 |
| 1974 | 3,747 | 1,600 | 425 | 1,323 | 399 |
| 1975 | 3,994 | 1,673 | 477 | 1,389 | 455 |
| 1976 | 3,871 | 1,614 | 419 | 1,412 | 426 |
| 1977 | 3,942 | 1,608 | 426 | 1,458 | 450 |
| 1978 | 3,918 | 1,564 | 428 | 1,461 | 465 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 3,934 | 1,609 | 438 | 1,428 | 459 |
| 1980 | 3,931 | 1,613 | 442 | 1,418 | 458 |
| 1981 | 3,923 | 1,613 | 447 | 1,405 | 458 |
| 1982 | 3,888 | 1,602 | 446 | 1,385 | 455 |
| 1983 | 3,835 | 1,579 | 448 | 1,355 | 453 |
| 1984 | 3,760 | 1,545 | 448 | 1,318 | 449 |
| 1985 | 3,680 | 1,506 | 448 | 1,280 | 446 |
| 1986 | 3,599 | 1,465 | 448 | 1,243 | 443 |
| 1987 | 3,540 | 1,436 | 446 | 1,219 | 439 |
| 1988 | 3,511 | 1,423 | 444 | 1,208 | 436 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 3,794 | 1,532 | 432 | 1,384 | 446 |
| 1980 | 3,724 | 1,502 | 432 | 1,347 | 443 |
| 1981 | 3,654 | 1,471 | 432 | 1,310 | 441 |
| 1982 | 3,566 | 1,435 | 427 | 1,269 | 435 |
| 1983 | 3,464 | 1,390 | 423 | 1,222 | 429 |
| 1984 | 3,350 | 1,339 | 419 | 1,170 | 422 |
| 1985 | 3,237 | 1,287 | 414 | 1,120 | 416 |
| 1986 | 3,128 | 1,236 | 408 | 1,075 | 409 |
| 1987 | 3,042 | 1,197 | 402 | 1,041 | 402 |
| 1988 | 2,984 | 1,173 | 395 | 1,021 | 395 |
| **High alternative projections[1]** | | | | | |
| 1979 | 4,133 | 1,665 | 468 | 1,518 | 482 |
| 1980 | 4,216 | 1,702 | 482 | 1,540 | 492 |
| 1981 | 4,300 | 1,736 | 497 | 1,557 | 510 |
| 1982 | 4,356 | 1,760 | 507 | 1,566 | 523 |
| 1983 | 4,392 | 1,773 | 517 | 1,563 | 539 |
| 1984 | 4,402 | 1,772 | 527 | 1,550 | 553 |
| 1985 | 4,404 | 1,765 | 537 | 1,534 | 568 |
| 1986 | 4,400 | 1,755 | 545 | 1,518 | 582 |
| 1987 | 4,419 | 1,757 | 553 | 1,512 | 597 |
| 1988 | 4,471 | 1,778 | 560 | 1,522 | 611 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 9B.—Undergraduate enrollment in public 2-year institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 1,646 | 559 | 451 | 298 | 338 |
| 1969 | 1,846 | 619 | 503 | 332 | 392 |
| 1970 | 2,102 | 682 | 573 | 386 | 461 |
| 1971 | 2,365 | 746 | 642 | 448 | 529 |
| 1972 | 2,640 | 750 | 737 | 500 | 653 |
| 1973 | 2,888 | 793 | 800 | 545 | 750 |
| 1974 | 3,284 | 833 | 941 | 586 | 924 |
| 1975 | 3,832 | 989 | 1,106 | 674 | 1,063 |
| 1976 | 3,746 | 857 | 1,059 | 703 | 1,127 |
| 1977 | 3,900 | 805 | 1,098 | 739 | 1,258 |
| 1978 | 3,868 | 738 | 1,082 | 700 | 1,348 |
| | | **Intermediate alternative projections[1]** | | | |
| 1979 | 4,059 | 816 | 1,107 | 764 | 1,372 |
| 1980 | 4,148 | 827 | 1,133 | 782 | 1,406 |
| 1981 | 4,219 | 832 | 1,157 | 792 | 1,438 |
| 1982 | 4,249 | 833 | 1,166 | 797 | 1,453 |
| 1983 | 4,263 | 828 | 1,175 | 793 | 1,467 |
| 1984 | 4,249 | 815 | 1,179 | 779 | 1,476 |
| 1985 | 4,230 | 802 | 1,180 | 765 | 1,483 |
| 1986 | 4,211 | 792 | 1,179 | 754 | 1,486 |
| 1987 | 4,197 | 785 | 1,174 | 751 | 1,487 |
| 1988 | 4,197 | 785 | 1,169 | 756 | 1,487 |
| | | **Low alternative projections[1]** | | | |
| 1979 | 3,944 | 777 | 1,095 | 742 | 1,330 |
| 1980 | 3,981 | 770 | 1,109 | 745 | 1,357 |
| 1981 | 4,004 | 760 | 1,121 | 741 | 1,382 |
| 1982 | 3,986 | 746 | 1,119 | 733 | 1,388 |
| 1983 | 3,952 | 730 | 1,114 | 717 | 1,391 |
| 1984 | 3,895 | 707 | 1,105 | 694 | 1,389 |
| 1985 | 3,836 | 686 | 1,094 | 672 | 1,384 |
| 1986 | 3,775 | 667 | 1,079 | 654 | 1,375 |
| 1987 | 3,725 | 654 | 1,062 | 644 | 1,365 |
| 1988 | 3,685 | 646 | 1,045 | 641 | 1,353 |
| | | **High alternative projections[1]** | | | |
| 1979 | 4,292 | 861 | 1,181 | 811 | 1,439 |
| 1980 | 4,485 | 893 | 1,234 | 848 | 1,510 |
| 1981 | 4,685 | 921 | 1,285 | 876 | 1,603 |
| 1982 | 4,842 | 944 | 1,321 | 899 | 1,678 |
| 1983 | 4,987 | 962 | 1,357 | 912 | 1,756 |
| 1984 | 5,104 | 971 | 1,388 | 914 | 1,831 |
| 1985 | 5,214 | 979 | 1,415 | 915 | 1,905 |
| 1986 | 5,321 | 989 | 1,439 | 918 | 1,975 |
| 1987 | 5,437 | 1,005 | 1,460 | 928 | 2,044 |
| 1988 | 5,569 | 1,028 | 1,482 | 947 | 2,112 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 9C.—Undergraduate enrollment in private 4-year institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 1,549 | 731 | 183 | 514 | 121 |
| 1969 | 1,596 | 750 | 193 | 527 | 126 |
| 1970 | 1,627 | 754 | 196 | 541 | 136 |
| 1971 | 1,616 | 745 | 185 | 551 | 135 |
| 1972 | 1,604 | 726 | 180 | 559 | 139 |
| 1973 | 1,615 | 710 | 189 | 566 | 150 |
| 1974 | 1,648 | 717 | 192 | 577 | 162 |
| 1975 | 1,719 | 750 | 193 | 595 | 181 |
| 1976 | 1,680 | 725 | 167 | 616 | 172 |
| 1977 | 1,732 | 728 | 170 | 645 | 189 |
| 1978 | 1,750 | 722 | 169 | 662 | 197 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 1,742 | 736 | 174 | 639 | 193 |
| 1980 | 1,741 | 738 | 176 | 635 | 192 |
| 1981 | 1,736 | 737 | 178 | 629 | 192 |
| 1982 | 1,722 | 733 | 178 | 620 | 191 |
| 1983 | 1,697 | 722 | 178 | 607 | 190 |
| 1984 | 1,663 | 706 | 178 | 590 | 189 |
| 1985 | 1,628 | 689 | 179 | 573 | 187 |
| 1986 | 1,590 | 670 | 178 | 556 | 186 |
| 1987 | 1,564 | 657 | 178 | 545 | 184 |
| 1988 | 1,552 | 651 | 177 | 541 | 183 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 1,678 | 700 | 172 | 619 | 187 |
| 1980 | 1,648 | 687 | 172 | 603 | 186 |
| 1981 | 1,616 | 673 | 172 | 586 | 185 |
| 1982 | 1,576 | 656 | 170 | 568 | 182 |
| 1983 | 1,532 | 636 | 169 | 547 | 180 |
| 1984 | 1,480 | 612 | 167 | 524 | 177 |
| 1985 | 1,428 | 588 | 165 | 501 | 174 |
| 1986 | 1,381 | 565 | 163 | 481 | 172 |
| 1987 | 1,342 | 547 | 160 | 466 | 169 |
| 1988 | 1,316 | 536 | 157 | 457 | 166 |
| **High alternative projections[1]** | | | | | |
| 1979 | 1,829 | 761 | 187 | 679 | 202 |
| 1980 | 1,865 | 778 | 192 | 689 | 206 |
| 1981 | 1,903 | 794 | 198 | 697 | 214 |
| 1982 | 1,928 | 805 | 202 | 701 | 220 |
| 1983 | 1,942 | 811 | 206 | 699 | 226 |
| 1984 | 1,947 | 811 | 210 | 694 | 232 |
| 1985 | 1,946 | 807 | 214 | 687 | 238 |
| 1986 | 1,943 | 803 | 217 | 679 | 244 |
| 1987 | 1,951 | 804 | 220 | 677 | 250 |
| 1988 | 1,973 | 813 | 223 | 681 | 256 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 9D.—Undergraduate enrollment in private 2-year institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 145 | 65 | 15 | 53 | 12 |
| 1969 | 129 | 54 | 14 | 50 | 11 |
| 1970 | 121 | 49 | 14 | 48 | 10 |
| 1971 | 120 | 48 | 13 | 48 | 11 |
| 1972 | 114 | 43 | 13 | 47 | 11 |
| 1973 | 124 | 45 | 15 | 50 | 14 |
| 1974 | 119 | 41 | 16 | 49 | 13 |
| 1975 | 134 | 47 | 22 | 52 | 13 |
| 1976 | 132 | 46 | 15 | 57 | 14 |
| 1977 | 140 | 47 | 14 | 63 | 16 |
| 1978 | 155 | 48 | 15 | 72 | 20 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 157 | 50 | 15 | 73 | 19 |
| 1980 | 161 | 51 | 16 | 74 | 20 |
| 1981 | 162 | 51 | 16 | 75 | 20 |
| 1982 | 163 | 51 | 16 | 76 | 20 |
| 1983 | 163 | 51 | 16 | 75 | 21 |
| 1984 | 161 | 50 | 16 | 74 | 21 |
| 1985 | 160 | 49 | 17 | 73 | 21 |
| 1986 | 158 | 49 | 16 | 72 | 21 |
| 1987 | 156 | 48 | 16 | 71 | 21 |
| 1988 | 157 | 48 | 16 | 72 | 21 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 153 | 48 | 15 | 71 | 19 |
| 1980 | 153 | 47 | 16 | 71 | 19 |
| 1981 | 153 | 47 | 16 | 71 | 19 |
| 1982 | 151 | 46 | 16 | 70 | 19 |
| 1983 | 148 | 45 | 16 | 68 | 19 |
| 1984 | 143 | 43 | 15 | 66 | 19 |
| 1985 | 140 | 42 | 15 | 64 | 19 |
| 1986 | 137 | 41 | 15 | 62 | 19 |
| 1987 | 135 | 40 | 15 | 61 | 19 |
| 1988 | 135 | 40 | 15 | 61 | 19 |
| **High alternative projections[1]** | | | | | |
| 1979 | 167 | 53 | 17 | 77 | 20 |
| 1980 | 174 | 55 | 17 | 81 | 21 |
| 1981 | 179 | 56 | 18 | 83 | 22 |
| 1982 | 185 | 58 | 18 | 86 | 23 |
| 1983 | 190 | 59 | 19 | 87 | 25 |
| 1984 | 192 | 60 | 19 | 87 | 26 |
| 1985 | 194 | 60 | 20 | 87 | 27 |
| 1986 | 196 | 61 | 20 | 87 | 28 |
| 1987 | 199 | 62 | 20 | 88 | 29 |
| 1988 | 204 | 63 | 21 | 90 | 30 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 10.—Graduate enrollment in all institutions of higher education, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 885 | 240 | 318 | 97 | 230 |
| 1969 | 955 | 252 | 338 | 111 | 255 |
| 1970 | 1,031 | 264 | 366 | 115 | 285 |
| 1971 | 1,012 | 269 | 346 | 119 | 277 |
| 1972 | 1,066 | 268 | 358 | 126 | 313 |
| 1973 | 1,123 | 273 | 375 | 137 | 340 |
| 1974 | 1,190 | 276 | 387 | 151 | 375 |
| 1975 | 1,263 | 290 | 410 | 163 | 400 |
| 1976 | 1,333 | 287 | 427 | 176 | 443 |
| 1977 | 1,318 | 289 | 411 | 183 | 434 |
| 1978 | 1,312 | 280 | 402 | 188 | 442 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 1,355 | 278 | 429 | 190 | 458 |
| 1980 | 1,365 | 281 | 436 | 190 | 458 |
| 1981 | 1,379 | 283 | 443 | 192 | 461 |
| 1982 | 1,376 | 282 | 444 | 192 | 458 |
| 1983 | 1,380 | 283 | 447 | 192 | 458 |
| 1984 | 1,382 | 283 | 450 | 192 | 457 |
| 1985 | 1,382 | 281 | 453 | 192 | 456 |
| 1986 | 1,380 | 280 | 455 | 191 | 454 |
| 1987 | 1,371 | 277 | 455 | 188 | 451 |
| 1988 | 1,358 | 271 | 455 | 185 | 447 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 1,318 | 264 | 424 | 187 | 443 |
| 1980 | 1,312 | 260 | 425 | 185 | 442 |
| 1981 | 1,308 | 257 | 427 | 184 | 440 |
| 1982 | 1,293 | 251 | 424 | 181 | 437 |
| 1983 | 1,278 | 246 | 421 | 178 | 433 |
| 1984 | 1,265 | 242 | 420 | 173 | 428 |
| 1985 | 1,248 | 237 | 417 | 171 | 423 |
| 1986 | 1,230 | 231 | 414 | 168 | 417 |
| 1987 | 1,210 | 225 | 410 | 164 | 411 |
| 1988 | 1,183 | 218 | 403 | 159 | 403 |
| **High alternative projections[1]** | | | | | |
| 1979 | 1,467 | 315 | 462 | 210 | 480 |
| 1980 | 1,521 | 326 | 478 | 223 | 494 |
| 1981 | 1,586 | 339 | 495 | 238 | 514 |
| 1982 | 1,634 | 348 | 506 | 249 | 531 |
| 1983 | 1,689 | 358 | 521 | 260 | 550 |
| 1984 | 1,743 | 368 | 534 | 272 | 569 |
| 1985 | 1,794 | 377 | 548 | 282 | 587 |
| 1986 | 1,841 | 385 | 560 | 291 | 605 |
| 1987 | 1,882 | 390 | 571 | 299 | 622 |
| 1988 | 1,917 | 394 | 581 | 305 | 637 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 10A.—Graduate enrollment in public institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 584 | 154 | 200 | 65 | 165 |
| 1969 | 666 | 166 | 227 | 77 | 196 |
| 1970 | 724 | 175 | 248 | 81 | 220 |
| 1971 | 712 | 183 | 232 | 83 | 213 |
| 1972 | 757 | 182 | 245 | 87 | 243 |
| 1973 | 799 | 185 | 257 | 95 | 263 |
| 1974 | 852 | 189 | 265 | 106 | 292 |
| 1975 | 906 | 198 | 283 | 114 | 311 |
| 1976 | 932 | 190 | 287 | 120 | 334 |
| 1977 | 900 | 190 | 267 | 124 | 319 |
| 1978 | 894 | 183 | 258 | 127 | 326 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 929 | 183 | 278 | 129 | 339 |
| 1980 | 935 | 185 | 282 | 129 | 339 |
| 1981 | 945 | 186 | 287 | 131 | 341 |
| 1982 | 943 | 185 | 288 | 131 | 339 |
| 1983 | 946 | 186 | 290 | 131 | 339 |
| 1984 | 947 | 186 | 292 | 131 | 338 |
| 1985 | 947 | 185 | 294 | 131 | 337 |
| 1986 | 945 | 184 | 295 | 130 | 336 |
| 1987 | 939 | 182 | 295 | 128 | 334 |
| 1988 | 930 | 178 | 295 | 126 | 331 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 904 | 174 | 275 | 127 | 328 |
| 1980 | 899 | 171 | 275 | 126 | 327 |
| 1981 | 897 | 169 | 277 | 125 | 326 |
| 1982 | 886 | 165 | 275 | 123 | 323 |
| 1983 | 876 | 162 | 273 | 121 | 320 |
| 1984 | 866 | 159 | 272 | 119 | 316 |
| 1985 | 856 | 156 | 270 | 117 | 313 |
| 1986 | 843 | 152 | 268 | 115 | 308 |
| 1987 | 829 | 148 | 265 | 112 | 304 |
| 1988 | 810 | 143 | 261 | 108 | 298 |
| **High alternative projections[1]** | | | | | |
| 1979 | 1,004 | 207 | 299 | 143 | 355 |
| 1980 | 1,041 | 214 | 310 | 152 | 365 |
| 1981 | 1,085 | 223 | 320 | 162 | 380 |
| 1982 | 1,120 | 229 | 328 | 170 | 393 |
| 1983 | 1,156 | 235 | 337 | 177 | 407 |
| 1984 | 1,194 | 242 | 346 | 185 | 421 |
| 1985 | 1,229 | 248 | 355 | 192 | 434 |
| 1986 | 1,262 | 253 | 363 | 198 | 448 |
| 1987 | 1,290 | 256 | 370 | 204 | 460 |
| 1988 | 1,314 | 259 | 376 | 208 | 471 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education*.

**Table 10B.—Graduate enrollment in private institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 301 | 86 | 118 | 32 | 65 |
| 1969 | 289 | 86 | 111 | 34 | 59 |
| 1970 | 307 | 89 | 118 | 34 | 65 |
| 1971 | 300 | 86 | 114 | 36 | 64 |
| 1972 | 308 | 86 | 113 | 39 | 70 |
| 1973 | 324 | 88 | 118 | 42 | 77 |
| 1974 | 338 | 87 | 122 | 45 | 83 |
| 1975 | 357 | 92 | 127 | 49 | 89 |
| 1976 | 401 | 97 | 140 | 56 | 109 |
| 1977 | 416 | 98 | 144 | 59 | 115 |
| 1978 | 418 | 97 | 144 | 61 | 116 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 426 | 95 | 151 | 61 | 119 |
| 1980 | 430 | 96 | 154 | 61 | 119 |
| 1981 | 434 | 97 | 156 | 61 | 120 |
| 1982 | 433 | 97 | 156 | 61 | 119 |
| 1983 | 434 | 97 | 157 | 61 | 119 |
| 1984 | 435 | 97 | 158 | 61 | 119 |
| 1985 | 435 | 96 | 159 | 61 | 119 |
| 1986 | 435 | 96 | 160 | 61 | 118 |
| 1987 | 432 | 95 | 160 | 60 | 117 |
| 1988 | 428 | 93 | 160 | 59 | 116 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 414 | 90 | 149 | 60 | 115 |
| 1980 | 413 | 89 | 150 | 59 | 115 |
| 1981 | 411 | 88 | 150 | 59 | 114 |
| 1982 | 407 | 86 | 149 | 58 | 114 |
| 1983 | 402 | 84 | 148 | 57 | 113 |
| 1984 | 399 | 83 | 148 | 56 | 112 |
| 1985 | 392 | 81 | 147 | 54 | 110 |
| 1986 | 387 | 79 | 146 | 53 | 109 |
| 1987 | 381 | 77 | 145 | 52 | 107 |
| 1988 | 373 | 75 | 142 | 51 | 105 |
| **High alternative projections[1]** | | | | | |
| 1979 | 463 | 108 | 163 | 67 | 125 |
| 1980 | 480 | 112 | 168 | 71 | 129 |
| 1981 | 501 | 116 | 175 | 76 | 134 |
| 1982 | 514 | 119 | 178 | 79 | 138 |
| 1983 | 533 | 123 | 184 | 83 | 143 |
| 1984 | 549 | 126 | 188 | 87 | 148 |
| 1985 | 565 | 129 | 193 | 90 | 153 |
| 1986 | 579 | 132 | 197 | 93 | 157 |
| 1987 | 592 | 134 | 201 | 95 | 162 |
| 1988 | 603 | 135 | 205 | 97 | 166 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 11.—First-professional enrollment in all institutions of higher education, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 152 | 118 | 20 | 14 | 0 |
| 1969 | 163 | 131 | 17 | 12 | 3 |
| 1970 | 175 | 144 | 17 | 13 | 1 |
| 1971 | 194 | 160 | 15 | 17 | 2 |
| 1972 | 207 | 168 | 15 | 21 | 3 |
| 1973 | 218 | 171 | 14 | 30 | 3 |
| 1974 | 236 | 179 | 15 | 38 | 4 |
| 1975 | 245 | 177 | 18 | 42 | 8 |
| 1976 | 251 | 175 | 20 | 50 | 6 |
| 1977 | 251 | 173 | 18 | 53 | 7 |
| 1978 | 257 | 175 | 17 | 58 | 7 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 261 | 174 | 19 | 60 | 8 |
| 1980 | 265 | 175 | 19 | 63 | 8 |
| 1981 | 271 | 178 | 19 | 66 | 8 |
| 1982 | 272 | 177 | 20 | 67 | 8 |
| 1983 | 275 | 178 | 20 | 69 | 8 |
| 1984 | 277 | 178 | 20 | 71 | 8 |
| 1985 | 278 | 178 | 20 | 72 | 8 |
| 1986 | 277 | 177 | 20 | 72 | 8 |
| 1987 | 276 | 175 | 20 | 73 | 8 |
| 1988 | 273 | 172 | 20 | 73 | 8 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 252 | 165 | 19 | 60 | 8 |
| 1980 | 251 | 162 | 19 | 62 | 8 |
| 1981 | 250 | 160 | 19 | 63 | 8 |
| 1982 | 245 | 157 | 19 | 63 | 6 |
| 1983 | 244 | 155 | 19 | 64 | 6 |
| 1984 | 241 | 152 | 19 | 64 | 6 |
| 1985 | 239 | 150 | 19 | 64 | 6 |
| 1986 | 235 | 147 | 18 | 64 | 6 |
| 1987 | 230 | 143 | 18 | 63 | 6 |
| 1988 | 224 | 138 | 18 | 62 | 6 |
| **High alternative projections[1]** | | | | | |
| 1979 | 290 | 195 | 20 | 67 | 8 |
| 1980 | 307 | 203 | 21 | 75 | 8 |
| 1981 | 322 | 211 | 22 | 81 | 8 |
| 1982 | 336 | 217 | 23 | 87 | 9 |
| 1983 | 351 | 225 | 23 | 94 | 9 |
| 1984 | 364 | 231 | 24 | 100 | 9 |
| 1985 | 377 | 238 | 24 | 106 | 9 |
| 1986 | 390 | 244 | 25 | 111 | 10 |
| 1987 | 399 | 248 | 25 | 116 | 10 |
| 1988 | 405 | 251 | 25 | 119 | 10 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 11A.—First-professional enrollment in public institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 64 | 53 | 3 | 7 | 1 |
| 1969 | 71 | 59 | 4 | 6 | 2 |
| 1970 | 76 | 66 | 4 | 6 | 0 |
| 1971 | 86 | 73 | 4 | 8 | 1 |
| 1972 | 91 | 76 | 3 | 10 | 2 |
| 1973 | 97 | 79 | 2 | 15 | 1 |
| 1974 | 105 | 81 | 4 | 19 | 1 |
| 1975 | 105 | 76 | 6 | 19 | 4 |
| 1976 | 105 | 76 | 5 | 23 | 1 |
| 1977 | 103 | 74 | 4 | 24 | 1 |
| 1978 | 105 | 75 | 3 | 26 | 1 |
| | | **Intermediate alternative projections[1]** | | | |
| 1979 | 108 | 75 | 4 | 27 | 2 |
| 1980 | 110 | 75 | 4 | 29 | 2 |
| 1981 | 113 | 77 | 4 | 30 | 2 |
| 1982 | 114 | 77 | 4 | 31 | 2 |
| 1983 | 115 | 77 | 4 | 32 | 2 |
| 1984 | 116 | 77 | 4 | 33 | 2 |
| 1985 | 117 | 77 | 4 | 34 | 2 |
| 1986 | 117 | 77 | 4 | 34 | 2 |
| 1987 | 117 | 76 | 4 | 35 | 2 |
| 1988 | 116 | 75 | 4 | 35 | 2 |
| | | **Low alternative projections[1]** | | | |
| 1979 | 104 | 71 | 4 | 27 | 2 |
| 1980 | 104 | 70 | 4 | 28 | 2 |
| 1981 | 104 | 69 | 4 | 29 | 2 |
| 1982 | 102 | 68 | 4 | 29 | 1 |
| 1983 | 102 | 67 | 4 | 30 | 1 |
| 1984 | 101 | 66 | 4 | 30 | 1 |
| 1985 | 100 | 65 | 4 | 30 | 1 |
| 1986 | 99 | 64 | 4 | 30 | 1 |
| 1987 | 97 | 62 | 4 | 30 | 1 |
| 1988 | 95 | 60 | 4 | 30 | 1 |
| | | **High alternative projections[1]** | | | |
| 1979 | 120 | 84 | 4 | 30 | 2 |
| 1980 | 128 | 88 | 4 | 34 | 2 |
| 1981 | 135 | 91 | 5 | 37 | 2 |
| 1982 | 141 | 94 | 5 | 40 | 2 |
| 1983 | 149 | 98 | 5 | 44 | 2 |
| 1984 | 154 | 100 | 5 | 47 | 2 |
| 1985 | 160 | 103 | 5 | 50 | 2 |
| 1986 | 166 | 106 | 5 | 53 | 2 |
| 1987 | 170 | 108 | 5 | 55 | 2 |
| 1988 | 173 | 109 | 5 | 57 | 2 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 11B.—First-professional enrollment in private institutions, with alternative projections, by sex and attendance status: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Men | | Women | |
|---|---|---|---|---|---|
| | | Full-time | Part-time | Full-time | Part-time |
| 1968 | 88 | 65 | 17 | 7 | 0 |
| 1969 | 92 | 72 | 13 | 6 | 1 |
| 1970 | 99 | 78 | 13 | 7 | 1 |
| 1971 | 108 | 87 | 11 | 9 | 1 |
| 1972 | 116 | 92 | 12 | 11 | 1 |
| 1973 | 121 | 92 | 12 | 15 | 2 |
| 1974 | 131 | 98 | 11 | 19 | 3 |
| 1975 | 140 | 101 | 12 | 23 | 4 |
| 1976 | 146 | 99 | 15 | 27 | 5 |
| 1977 | 148 | 99 | 15 | 30 | 5 |
| 1978 | 152 | 100 | 15 | 32 | 6 |
| **Intermediate alternative projections[1]** | | | | | |
| 1979 | 153 | 99 | 15 | 33 | 6 |
| 1980 | 155 | 100 | 15 | 34 | 6 |
| 1981 | 158 | 101 | 15 | 36 | 6 |
| 1982 | 158 | 100 | 16 | 36 | 6 |
| 1983 | 160 | 101 | 16 | 37 | 6 |
| 1984 | 161 | 101 | 16 | 38 | 6 |
| 1985 | 161 | 101 | 16 | 38 | 6 |
| 1986 | 160 | 100 | 16 | 38 | 6 |
| 1987 | 159 | 99 | 16 | 38 | 6 |
| 1988 | 157 | 97 | 16 | 38 | 6 |
| **Low alternative projections[1]** | | | | | |
| 1979 | 148 | 94 | 15 | 33 | 6 |
| 1980 | 147 | 92 | 15 | 34 | 6 |
| 1981 | 146 | 91 | 15 | 34 | 6 |
| 1982 | 143 | 89 | 15 | 34 | 5 |
| 1983 | 142 | 88 | 15 | 34 | 5 |
| 1984 | 140 | 86 | 15 | 34 | 5 |
| 1985 | 139 | 85 | 15 | 34 | 5 |
| 1986 | 136 | 83 | 14 | 34 | 5 |
| 1987 | 133 | 81 | 14 | 33 | 5 |
| 1988 | 129 | 78 | 14 | 32 | 5 |
| **High alternative projections[1]** | | | | | |
| 1979 | 170 | 111 | 16 | 37 | 6 |
| 1980 | 179 | 115 | 17 | 41 | 6 |
| 1981 | 187 | 120 | 17 | 44 | 6 |
| 1982 | 195 | 123 | 18 | 47 | 7 |
| 1983 | 202 | 127 | 18 | 50 | 7 |
| 1984 | 210 | 131 | 19 | 53 | 7 |
| 1985 | 217 | 135 | 19 | 56 | 7 |
| 1986 | 224 | 138 | 20 | 58 | 8 |
| 1987 | 229 | 140 | 20 | 61 | 8 |
| 1988 | 232 | 142 | 20 | 62 | 8 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 12.—Full-time-equivalent enrollment in all institutions of higher education, with alternative projections, by enrollment level of student and type of institution: United States, fall 1970 to 1988**

**(In thousands)**

| Year (fall) | Total | Undergraduate | | Graduate | | First-professional | |
|---|---|---|---|---|---|---|---|
| | | 4-Year | 2-Year | 4-Year | 2-Year | 4-Year | 2-Year |
| 1970 | 6,737 | 4,458 | 1,518 | 599 | 0 | 163 | 1 |
| 1971 | 7,149 | 4,632 | 1,719 | 613 | 0 | 185 | 0 |
| 1972 | 7,254 | 4,587 | 1,847 | 622 | 0 | 198 | 0 |
| 1973 | 7,453 | 4,560 | 2,014 | 669 | 0 | 210 | 0 |
| 1974 | 7,805 | 4,670 | 2,199 | 710 | 0 | 226 | 0 |
| 1975 | 8,481 | 4,914 | 2,579 | 756 | 2 | 229 | 0 |
| 1976 | 8,313 | 4,838 | 2,461 | 780 | 1 | 234 | 2 |
| 1977 | 8,415 | 4,919 | 2,479 | 775 | 1 | 240 | 0 |
| 1978 | 8,361 | 4,924 | 2,410 | 778 | 1 | 248 | 0 |
| **Intermediate alternative projections[1]** | | | | | | | |
| 1979 | 8,539 | 4,916 | 2,587 | 788 | 0 | 248 | 0 |
| 1980 | 8,595 | 4,909 | 2,640 | 794 | 0 | 252 | 0 |
| 1981 | 8,627 | 4,892 | 2,675 | 802 | 0 | 258 | 0 |
| 1982 | 8,595 | 4,846 | 2,691 | 800 | 0 | 259 | 0 |
| 1983 | 8,521 | 4,769 | 2,689 | 802 | 0 | 262 | 0 |
| 1984 | 8,394 | 4,663 | 2,665 | 803 | 0 | 264 | 0 |
| 1985 | 8,255 | 4,550 | 2,639 | 801 | 0 | 265 | 0 |
| 1986 | 8,114 | 4,434 | 2,617 | 799 | 0 | 264 | 0 |
| 1987 | 8,013 | 4,354 | 2,604 | 792 | 0 | 263 | 0 |
| 1988 | 7,967 | 4,317 | 2,608 | 782 | 0 | 260 | 0 |
| **Low alternative projections[1]** | | | | | | | |
| 1979 | 8,234 | 4,728 | 2,503 | 764 | 0 | 239 | 0 |
| 1980 | 8,139 | 4,630 | 2,513 | 758 | 0 | 238 | 0 |
| 1981 | 8,033 | 4,530 | 2,512 | 754 | 0 | 237 | 0 |
| 1982 | 7,877 | 4,412 | 2,489 | 743 | 0 | 233 | 0 |
| 1983 | 7,691 | 4,273 | 2,453 | 733 | 0 | 232 | 0 |
| 1984 | 7,469 | 4,117 | 2,399 | 723 | 0 | 229 | 0 |
| 1985 | 7,248 | 3,962 | 2,347 | 712 | 0 | 227 | 0 |
| 1986 | 7,038 | 3,816 | 2,299 | 699 | 0 | 224 | 0 |
| 1987 | 6,871 | 3,702 | 2,264 | 686 | 0 | 219 | 0 |
| 1988 | 6,754 | 3,630 | 2,243 | 668 | 0 | 213 | 0 |
| **High alternative projections[1]** | | | | | | | |
| 1979 | 9,035 | 5,156 | 2,736 | 865 | 0 | 277 | 0 |
| 1980 | 9,304 | 5,256 | 2,855 | 900 | 0 | 293 | 0 |
| 1981 | 9,564 | 5,349 | 2,966 | 942 | 0 | 308 | 0 |
| 1982 | 9,759 | 5,410 | 3,056 | 972 | 0 | 321 | 0 |
| 1983 | 9,910 | 5,439 | 3,130 | 1,005 | 0 | 336 | 0 |
| 1984 | 10,000 | 5,433 | 3,180 | 1,039 | 0 | 348 | 0 |
| 1985 | 10,069 | 5,413 | 3,225 | 1,069 | 0 | 361 | 0 |
| 1986 | 10,130 | 5,388 | 3,273 | 1,097 | 0 | 373 | 0 |
| 1987 | 10,230 | 5,395 | 3,333 | 1,120 | 0 | 382 | 0 |
| 1988 | 10,389 | 5,451 | 3,410 | 1,139 | 0 | 388 | 0 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 12A.—Full-time-equivalent enrollment in public institutions, with alternative projections, by enrollment level of student and type of institution: United States, fall 1970 to 1988**

**(In thousands)**

| Year (fall) | Total | Undergraduate | | Graduate | | First-professional | |
|---|---|---|---|---|---|---|---|
| | | 4-Year | 2-Year | 4-Year | 2-Year | 4-Year | 2-Year |
| 1970 | 4,953 | 3,053 | 1,413 | 414 | 0 | 73 | 0 |
| 1971 | 5,344 | 3,219 | 1,613 | 427 | 0 | 85 | 0 |
| 1972 | 5,453 | 3,187 | 1,747 | 431 | 0 | 88 | 0 |
| 1973 | 5,630 | 3,158 | 1,909 | 467 | 0 | 96 | 0 |
| 1974 | 5,945 | 3,245 | 2,097 | 501 | 0 | 102 | 0 |
| 1975 | 6,523 | 3,428 | 2,465 | 530 | 2 | 98 | 0 |
| 1976 | 6,350 | 3,369 | 2,348 | 534 | 1 | 99 | 2 |
| 1977 | 6,396 | 3,416 | 2,356 | 522 | 1 | 101 | 0 |
| 1978 | 6,291 | 3,393 | 2,276 | 519 | 1 | 102 | 0 |
| **Intermediate alternative projections[1]** | | | | | | | |
| 1979 | 6,487 | 3,401 | 2,450 | 532 | 0 | 105 | 0 |
| 1980 | 6,538 | 3,396 | 2,500 | 535 | 0 | 107 | 0 |
| 1981 | 6,570 | 3,385 | 2,535 | 540 | 0 | 110 | 0 |
| 1982 | 6,552 | 3,353 | 2,549 | 539 | 0 | 111 | 0 |
| 1983 | 6,500 | 3,300 | 2,548 | 541 | 0 | 112 | 0 |
| 1984 | 6,407 | 3,227 | 2,526 | 541 | 0 | 113 | 0 |
| 1985 | 6,305 | 3,149 | 2,502 | 541 | 0 | 114 | 0 |
| 1986 | 6,203 | 3,070 | 2,481 | 539 | 0 | 114 | 0 |
| 1987 | 6,132 | 3,014 | 2,470 | 534 | 0 | 114 | 0 |
| 1988 | 6,101 | 2,988 | 2,473 | 527 | 0 | 113 | 0 |
| **Low alternative projections[1]** | | | | | | | |
| 1979 | 6,259 | 3,272 | 2,370 | 516 | 0 | 101 | 0 |
| 1980 | 6,197 | 3,204 | 2,381 | 511 | 0 | 101 | 0 |
| 1981 | 6,124 | 3,135 | 2,380 | 509 | 0 | 101 | 0 |
| 1982 | 6,013 | 3,054 | 2,359 | 501 | 0 | 99 | 0 |
| 1983 | 5,877 | 2,958 | 2,326 | 494 | 0 | 99 | 0 |
| 1984 | 5,712 | 2,850 | 2,276 | 487 | 0 | 98 | 0 |
| 1985 | 5,549 | 2,744 | 2,228 | 480 | 0 | 97 | 0 |
| 1986 | 5,393 | 2,643 | 2,182 | 472 | 0 | 96 | 0 |
| 1987 | 5,271 | 2,564 | 2,150 | 462 | 0 | 94 | 0 |
| 1988 | 5,185 | 2,515 | 2,129 | 450 | 0 | 92 | 0 |
| **High alternative projections[1]** | | | | | | | |
| 1979 | 6,860 | 3,569 | 2,592 | 583 | 0 | 117 | 0 |
| 1980 | 7,072 | 3,637 | 2,704 | 606 | 0 | 125 | 0 |
| 1981 | 7,278 | 3,702 | 2,811 | 634 | 0 | 131 | 0 |
| 1982 | 7,432 | 3,744 | 2,896 | 656 | 0 | 137 | 0 |
| 1983 | 7,553 | 3,765 | 2,967 | 677 | 0 | 145 | 0 |
| 1984 | 7,625 | 3,760 | 3,015 | 700 | 0 | 150 | 0 |
| 1985 | 7,684 | 3,747 | 3,059 | 721 | 0 | 156 | 0 |
| 1986 | 7,737 | 3,730 | 3,105 | 740 | 0 | 162 | 0 |
| 1987 | 7,820 | 3,736 | 3,163 | 755 | 0 | 166 | 0 |
| 1988 | 7,949 | 3,775 | 3,236 | 768 | 0 | 169 | 0 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

**Table 12B.—Full-time-equivalent enrollment in private institutions, with alternative projections, by enrollment level of student and type of institution: United States, fall 1970 to 1988**

**(In thousands)**

| Year (fall) | Total | Undergraduate | | Graduate | | First-professional | |
|---|---|---|---|---|---|---|---|
| | | 4-Year | 2-Year | 4-Year | 2-Year | 4-Year | 2-Year |
| 1970 | 1,784 | 1,407 | 105 | 184 | 0 | 89 | 0 |
| 1971 | 1,804 | 1,412 | 106 | 186 | 0 | 100 | 0 |
| 1972 | 1,801 | 1,400 | 100 | 191 | 0 | 110 | 0 |
| 1973 | 1,824 | 1,403 | 106 | 201 | 0 | 114 | 0 |
| 1974 | 1,861 | 1,425 | 102 | 208 | 0 | 124 | 0 |
| 1975 | 1,958 | 1,486 | 114 | 226 | 0 | 131 | 0 |
| 1976 | 1,963 | 1,469 | 113 | 246 | 0 | 135 | 0 |
| 1977 | 2,018 | 1,503 | 123 | 253 | 0 | 139 | 0 |
| 1978 | 2,070 | 1,531 | 134 | 259 | 0 | 146 | 0 |
| **Intermediate alternative projections[1]** | | | | | | | |
| 1979 | 2,051 | 1,515 | 137 | 257 | 0 | 143 | 0 |
| 1980 | 2,057 | 1,513 | 139 | 259 | 0 | 145 | 0 |
| 1981 | 2,057 | 1,507 | 140 | 261 | 0 | 148 | 0 |
| 1982 | 2,043 | 1,493 | 141 | 261 | 0 | 148 | 0 |
| 1983 | 2,021 | 1,469 | 141 | 261 | 0 | 150 | 0 |
| 1984 | 1,987 | 1,436 | 139 | 262 | 0 | 151 | 0 |
| 1985 | 1,950 | 1,401 | 137 | 261 | 0 | 151 | 0 |
| 1986 | 1,911 | 1,364 | 136 | 261 | 0 | 150 | 0 |
| 1987 | 1,881 | 1,340 | 134 | 259 | 0 | 149 | 0 |
| 1988 | 1,866 | 1,329 | 135 | 255 | 0 | 147 | 0 |
| **Low alternative projections[1]** | | | | | | | |
| 1979 | 1,975 | 1,455 | 133 | 249 | 0 | 138 | 0 |
| 1980 | 1,943 | 1,426 | 132 | 247 | 0 | 137 | 0 |
| 1981 | 1,909 | 1,395 | 132 | 246 | 0 | 136 | 0 |
| 1982 | 1,864 | 1,358 | 130 | 242 | 0 | 134 | 0 |
| 1983 | 1,814 | 1,316 | 127 | 239 | 0 | 133 | 0 |
| 1984 | 1,756 | 1,267 | 123 | 236 | 0 | 131 | 0 |
| 1985 | 1,698 | 1,218 | 120 | 231 | 0 | 130 | 0 |
| 1986 | 1,645 | 1,173 | 117 | 227 | 0 | 127 | 0 |
| 1987 | 1,600 | 1,138 | 115 | 223 | 0 | 124 | 0 |
| 1988 | 1,569 | 1,116 | 115 | 218 | 0 | 120 | 0 |
| **High alternative projections[1]** | | | | | | | |
| 1979 | 2,175 | 1,588 | 145 | 283 | 0 | 160 | 0 |
| 1980 | 2,232 | 1,618 | 151 | 294 | 0 | 168 | 0 |
| 1981 | 2,287 | 1,648 | 155 | 308 | 0 | 176 | 0 |
| 1982 | 2,327 | 1,666 | 160 | 316 | 0 | 184 | 0 |
| 1983 | 2,357 | 1,674 | 164 | 328 | 0 | 191 | 0 |
| 1984 | 2,375 | 1,673 | 165 | 339 | 0 | 198 | 0 |
| 1985 | 2,385 | 1,666 | 166 | 348 | 0 | 205 | 0 |
| 1986 | 2,393 | 1,657 | 167 | 357 | 0 | 211 | 0 |
| 1987 | 2,410 | 1,660 | 170 | 365 | 0 | 216 | 0 |
| 1988 | 2,439 | 1,676 | 173 | 371 | 0 | 219 | 0 |

[1]For methodological details, see appendix A, section A-1. For primary assumptions made, see appendix B, table B-1.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Fall Enrollment in Higher Education.*

# Chapter II
# HIGH SCHOOL GRADUATES AND EARNED DEGREES

## High School Graduates

The number of high school graduates increased from 2.8 million in 1968-69 to 3.2 million in 1976-77, an increase of 14.3 percent (table 13). High school graduates decreased slightly in 1977-78 to 3.1 million and are expected to continue decreasing in most years reaching 2.7 million in 1988-89 (figure 8). The expected decrease of 15.8 percent between 1977-78 and 1988-89 reflects the projected 15.5 percent decrease in the average of the 17- and 18-year old population over the same period.

Unlike enrollment data in Chapter I, table 13 includes graduates of regular public and nonpublic schools as well as graduates of "other" schools such as residential schools for exceptional children, subcollegiate departments of institutions of higher education, Federal schools for Indians, and federally operated schools on Federal installations (less than one percent of all high school graduates were in this category). However, 381,067[1] high school equivalency credentials issued by State education departments[2] in 1978 are excluded.

The projections of public high school graduates are based on annual data submitted each fall by State education agencies.

Nonpublic high school graduates are based on limited reports from the domain of private schools. The most recent report on nonpublic high school graduates covers the period from 1975-76 to 1977-78[3].

Projections of high school graduates by control of school are based on a demographic model which utilizes estimates and projections of the average of the 17- and 18-year old population from the Bureau of the Census and projections of enrollment in grade 12 in regular public secondary schools from the first component of IFMOD[4]. Projections of high school graduates by sex are based on the assumption that, high school graduates expressed as a percentage of the average of the 17- and 18-year old population will remain constant at levels consistent with the most recent rates. These rates were increasing in the early 1960's but, they began to level off in the late 1960's. In the decade of the 1970's, these rates have been stable and have not shifted appreciably from their levels in the late 1960's.

Projections of high school graduates of public schools are based on the assumption that the rate of graduates of grade 12 enrollment will remain consistent with most recent rates through 1988-89. High school graduates from nonpublic schools are assumed to be equal to the difference between total and public high school graduates.

The use of minimal competency tests might cause additional decreases in the number of high school graduates, if students who might otherwise graduate

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[1]Does not include outlying areas.

[2]American Council on Education, *GED Annual Statistical Report*, Washington, D.C., 1978

[3]Department of Health Education and Welfare, National Center for Education Statistics, "Selected Public and Private Elementary and Secondary Education Statistics", October 1979.

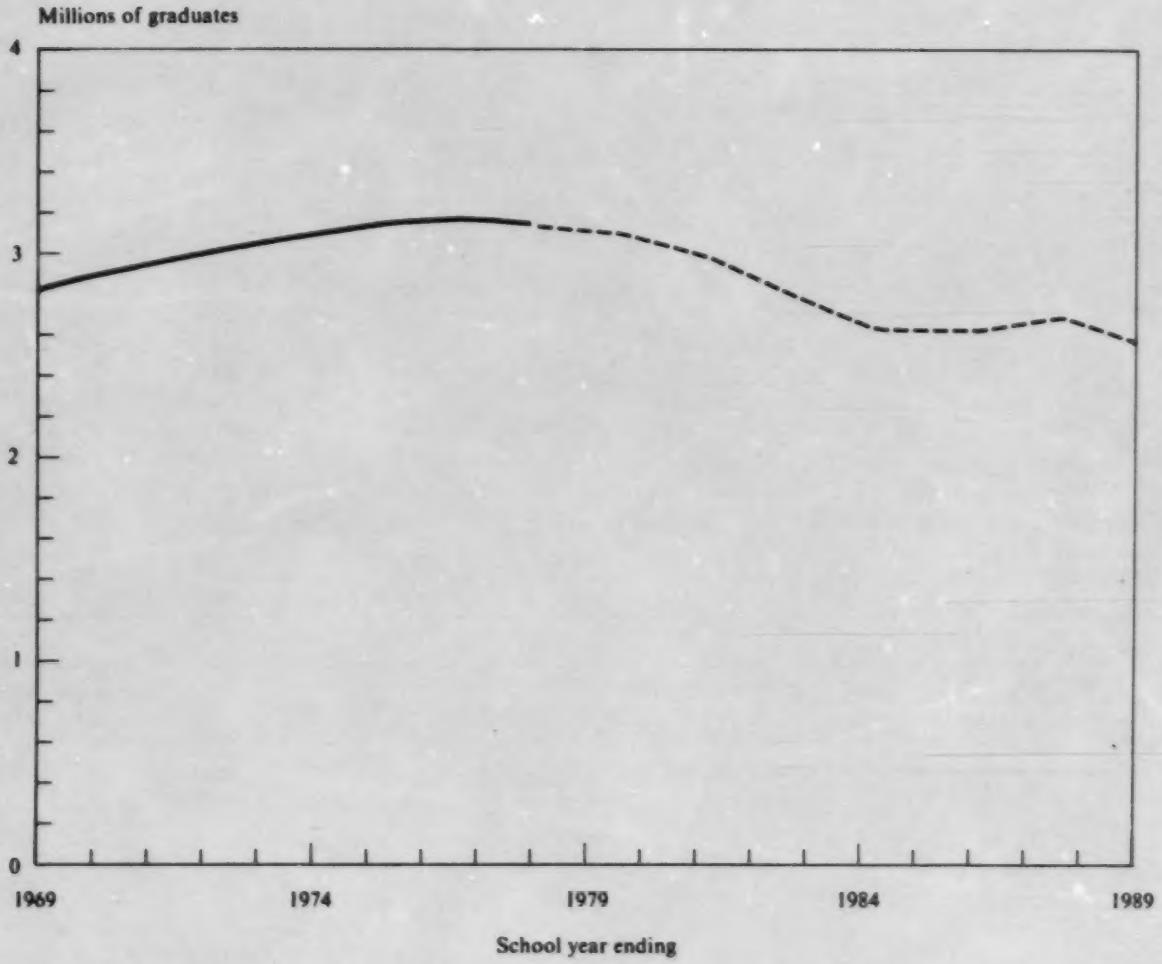
[4]See appendix A, section A. 1.

cannot pass the tests. Of the 38 states[5] which reported plans to institute minimal competency tests, nearly half of these states reported that they intended to use them for graduation purposes. In 1978, these 38 states represented less than half of public high school graduates[6]. In addition, most of the 38 states listed remedial assistance at various grade levels as an ongoing activity of their competency testing programs. However the effects of such activities are not clear at this time.

[5]Education Commission of the States, "State Activity, Minimal Competency Testings", July 1979.

[6]Department of Education, National Center for Education Statistics. *Statistics of Public Elementary and Secondary Day Schools, Fall 1978, October 1980.*

**Figure 8.—High school graduates, with projections: United States, 1968-69 to 1988-89**




Source: Table 13.



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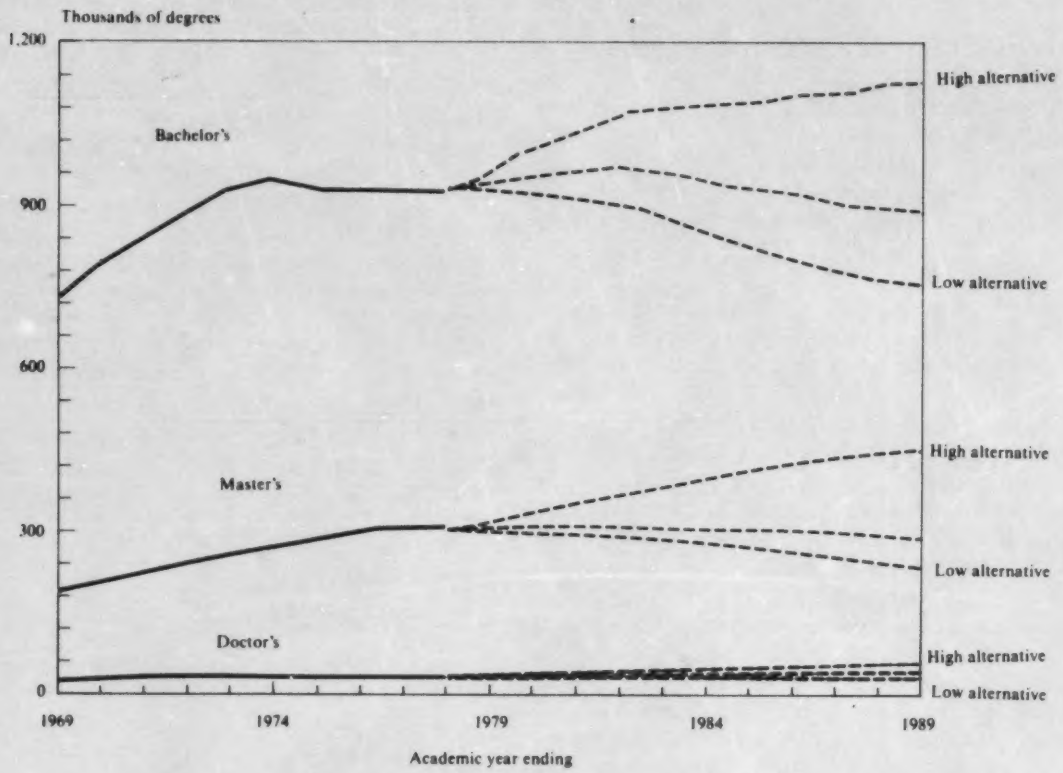
# Earned Degrees

The 1979 projections of degrees by sex of recipient, by field of study, and level of degree are based on data from the *Earned Degrees Conferred* reports from accredited institutions of higher education listed in NCES' *Education Directory, Colleges & Universities*. The data cover degrees granted during the academic year ending in June and include degrees earned in the prior summer. Although NCES surveys and reports provided the major portion of the data used in developing these projections, other information from education and professional associations, experts in other academic areas, and other agencies in the Federal Government were also taken into account.

Projections by sex are shown for college graduates at each of the four levels—bachelor's, master's, doctor's and first-professional. Also, degree projections by sex and field of study are presented for all levels. Alternative projections are shown for degrees by level and sex (table 14 and figure 9). Alternative projections of degrees by field, level, and sex can be estimated by multiplying the percentages from appendix tables A-19 to A-30 by the low and high alternative projections of total degrees by level and sex in table 14.

IFMOD was used in developing degree models by level and by field of study. As a result, the degree projections in this publication are based on a revised methodology. The demographic models relate degree outcomes to enrollment by year enrolled and attendance status and enrollment by age of recipients. The basic assumption made is that projections based on these models will portray the future direction of college graduates by level and by field of study if past relationships remain stable throughout the projection period. Although more students will be enrolled in college in the future, decreasing full-time enrollment is expected to lead to lower degree outcomes in the late 1980's.

**Figure 9.—Earned degrees, with alternative projections: United States, 1968-69 to 1988-89**




Source: Table 14.

## Bachelor's Degrees by Sex

The number of bachelor's degrees granted increased from 729,071 in 1968-69 to 945,776 in 1973-74, an increase of 29.7 percent. Then bachelor's degrees declined to 919,549 in 1976-77 before increasing slightly to 921,204 in 1977-78. Despite the fluctuation between 1973-74 and 1977-78, bachelor's degrees are expected to increase to 965,100 by 1981-82 and then decline to 891,800 by 1988-89. The expected source of increase in bachelor's degrees is due to the continued increase in the traditional college-age population (18-24 years) in the early 1980's. However, the expected decline in this population in the late 1980's is expected to lead to lower degree outcomes toward the end of the projection period.

For both men and women, bachelor's degrees are expected to peak in 1981-82 at 503,600 for men and 461,500 for women. By 1988-89, bachelor's degrees for men are expected to decrease to 458,400; while, degrees for women are expected to decrease at a slower rate to 433,400 (figure 10). In 1988-89 women will be awarded 48.6 percent of all bachelor's degrees.

## Master's Degrees by Sex

The number of master's degrees increased from 193,756 in 1968-69 to 311,620 in 1977-78. Master's degrees are expected to increase to 316,300 by 1982-83 and then decrease to 295,410 by 1988-89. For the first time, the number of master's degrees decreased by over 5,500 degrees in 1977-78 from the number granted in 1976-77 (317,164). Since master's degrees awarded to women have been increasing steadily, the decrease is largely due to a 3.9 percent decrease in the number of men receiving degrees in 1977-78 (from 167,783 in 1976-77 to 161,212 in 1977-78). However, the percentage increase in degrees awarded to women from 1976-77 to 1977-78 was less than one percent. The decrease in degrees awarded to men can be attributed to decreases in first-year graduate enrollment in 1976 when both full-time and first-year graduate enrollment decreased 7.3 percent and 3.9 percent, respectively.

For men, the projections of master's degrees are expected to decrease from 161,212 in 1977-78 to 146,240 in 1988-89. On the other hand, degrees awarded to women are expected to decrease slightly from 150,408 to 149,170 by 1988-89 (figure 11). By 1979-80, the number of master's degrees granted to women are expected to reach parity with men and exceed slightly the number of expected degrees for men for the remainder of the period.

## Doctor's Degrees by Sex

Doctor's degrees increased from 26,188 in 1968-69 to 34,777 in 1972-73 and then declined for most years to 32,131 in 1977-78. Projections of doctor's degrees are expected to increase only slightly to 32,980 in 1980-81 before declining to 27,950 in 1988-89. The number of men receiving doctor's degrees increased from 22,752 in 1968-69 to 23,658 in 1977-78. Doctor's degrees awarded to men are expected to decrease to 19,860 in 1988-89. The number of women receiving doctor's degrees increased greatly from 3,436 in 1968-69 to 8,473 in 1977-78. The number of degrees awarded to women are expected to increase to 9,270 by 1980-81, before declining to 8,090 by 1988-89 (figure 12). In 1977-78, 26.4 percent of all doctor's degrees were awarded to women compared to only 13.1 percent in 1968-69. By 1988-89, this percentage is expected to increase to 28.9 percent.

In 1977-78, doctor's degrees in engineering, health, and life sciences made up over 36 percent of doctor's degrees conferred; while, 11.5 percent of the doctor's degrees were awarded in the humanities. Information from the 1977 profile[7] of scientists, engineers, and humanists in the United States revealed several characteristics of persons employed in the sciences, who obtained doctorates within a span of four decades. The study showed that more than 55 percent of the scientists and engineers and nearly 90 percent of the humanists were employed in educational institutions (excluding post doctorates).

Projections of the demand for additional full-time equivalent instructional staff indicate a large decrease in the demand for faculty in the 1980's. Also, the Bureau of Labor Statistics reports that the demand for employment[8] of college and university faculty (excluding part-time junior instructors) is expected to decline 9.2 percent from its 1978 level and concludes that in the future, many doctoral graduates, whose first choice would be to teach in college, will probably have to pursue jobs in the nonacademic sector.

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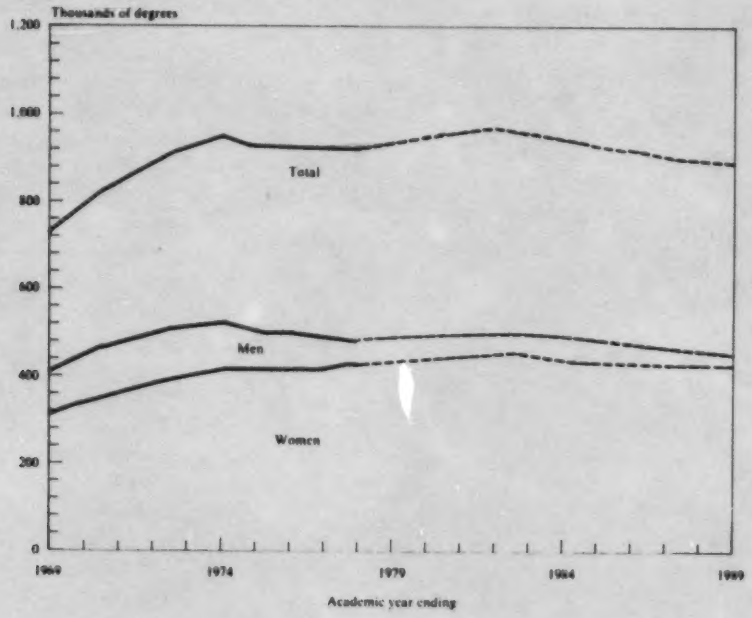
[7]National Research Council, *Science, Engineering, and Humanities Doctorates in the United States: 1977 Profile* (Washington, D. C.), 1978.

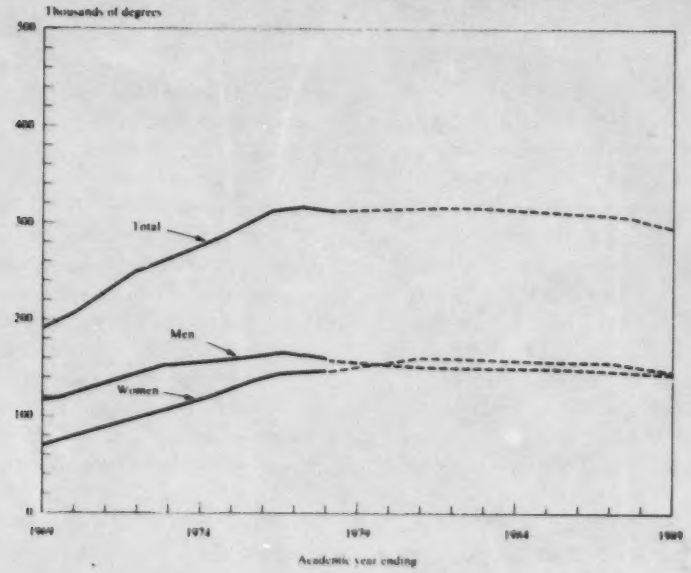
[8]U.S. Department of Labor, Bureau of Labor Statistics, *Occupational Projections and Training Data*, bulletin 2020 (Washington, D.C.), April 1979.

**Figure 10.—Earned bachelor's degrees, with intermediate alternative projections, by sex: United States, 1968-69 to 1988-89**




Source: Table 14

**Figure 11.—Earned master's degrees, with intermediate alternative projections, by sex: United States, 1968-69 to 1988-89**

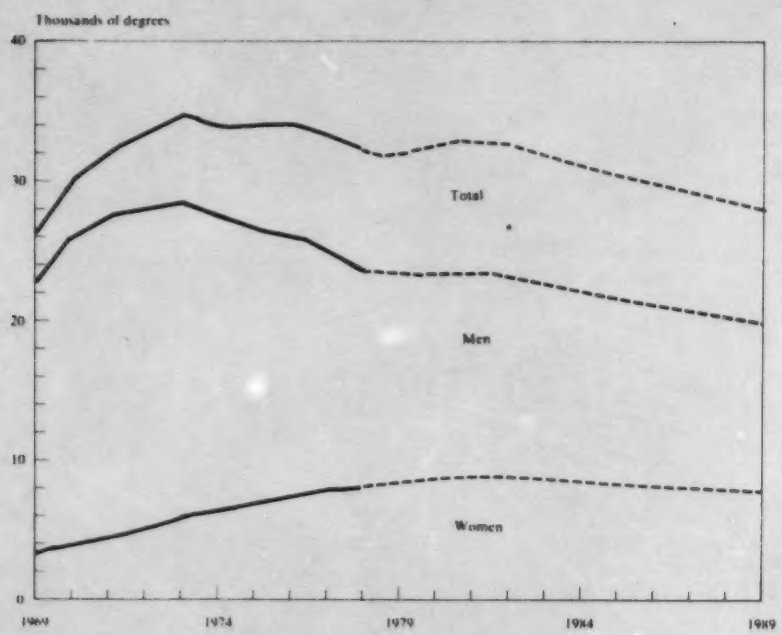



Source: Table 12



C-1

**Figure 12.—Earned doctor's degrees, with intermediate alternative projections, by sex: United States, 1968-69 to 1988-89**




Source: Table 14.

## First-Professional Degrees by Sex

First-professional degrees increased from 35,114 in 1968-69 to 66,581 in 1977-78, an increase of 89.6 percent. Projections of first-professional degrees are expected to increase 12 percent to 74,570 by 1988-89. This increase will be largely due to the continuation of rapid increases in the number of first-professional degrees awarded to women, which has increased from 3,529 in 1972-73 to 14,311 in 1977-78. Projections of first-professional degrees awarded to women are expected to increase to 21,210 in 1988-89. For men, first-professional degrees increased from 46,489 in 1972-73 to 52,270 in 1977-78. Gains in the future are expected to be slight, reaching only 53,360 in 1988-89 (figure 13). In 1977-78, women accounted for 21.5 percent of all first-professional degrees awarded, compared to only 4.3 percent in 1968-69. By 1988-89, this percentage is expected to increase to 28.4 percent.

## Percent Distribution of Degrees by Level and Field

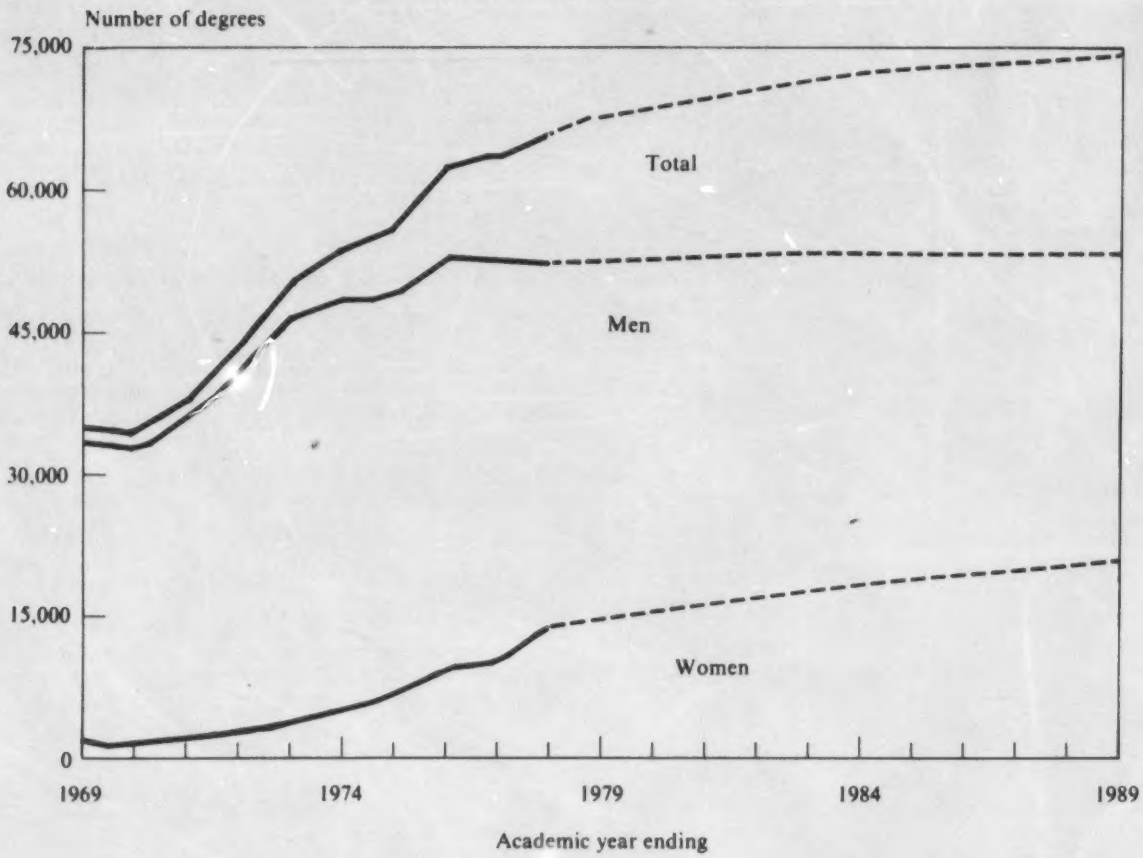
Percent distributions by field of study are shown for bachelor's, master's, doctor's and first-professional degrees for the years 1968-69, 1973-74, 1978-79, 1983-84, and 1988-89 in tables 15 through 17 and by selected fields for the years 1968-69, 1977-78 and 1988-89 in figures 14 through 17. Several fields are expected to show significant increases in their percentages of total bachelor's degrees. From 1977-78 to 1988-89, business and management is expected to increase from 13.1 to 16.7 percent, communications from 2.8 to 4.0 percent, engineering from 5.1 to 7.2 percent, health professions from 6.5 to 8.2 and physical sciences from 2.5 to 2.8. Education is expected to decrease sharply from 14.8 of total bachelor's degrees in 1977-78 to 8.2 percent in 1988-89. Additional decreases are expected in social sciences (12.6 to 8.6) and letters (4.8 to 3.2) from 1977-78 to 1988-89 (figure 14).

The largest master's degree field, education which constituted more than one-third of all master's degrees in 1977-78 is expected to decrease from 38.1 in 1977-78 to 30.3 in 1988-89. The next largest field, business and management, is expected to increase from 14.5 to 16.4 percent. Other increases are expected in psychology (2.6 to 3.4) and public affairs and services (6.4 to 9.3). Decreases in percentages are expected in social sciences (5.0 to 3.6), letters (3.2 to 2.6), and foreign languages (0.9 to 0.6) (figure 15). The remaining fields are expected to remain fairly constant.

At the doctorate level, the fields expected to increase are psychology (8.1 to 8.4), public affairs and services (1.2 to 1.9), agriculture and natural resources (3.0 to 3.8) and health professions (2.0 to 2.5). Decreases are expected to occur in social sciences (11.6 to 10.9), letters (6.4 to 5.2), physical sciences (9.8 to 8.8), and biological sciences (10.3 to 9.9). Other decreases are expected in mathematics and statistics (2.5 to 2.0), and engineering (7.6 to 7.2) (figure 16). The computer and information sciences, education, and accounting are expected to remain fairly constant.

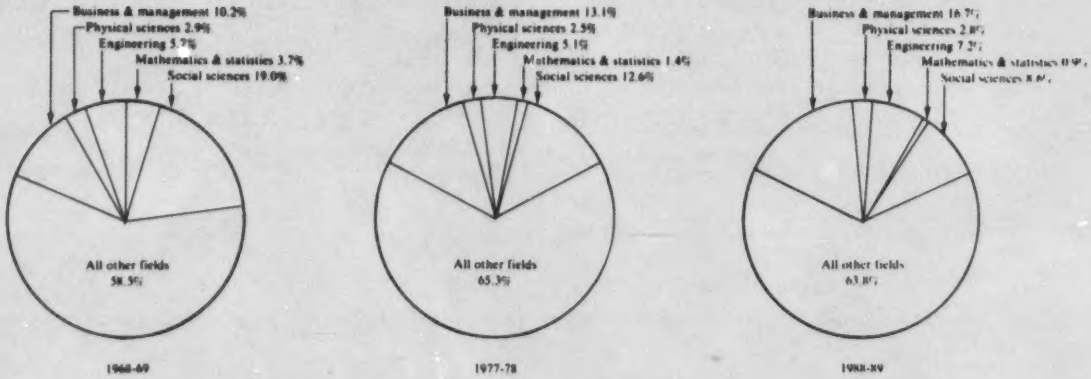
At the first-professional level, the fields expected to show increases are medicine (21.4 to 23.9), veterinary medicine (2.5 to 3.3), and theology (9.6 to 10.4). Decreases are expected in dentistry (7.8 to 7.3) and law (51.7 to 47.8) (figure 17).

**Figure 13.—Earned first-professional degrees, with intermediate alternative projections, by sex: United States, 1968-69 to 1988-89**



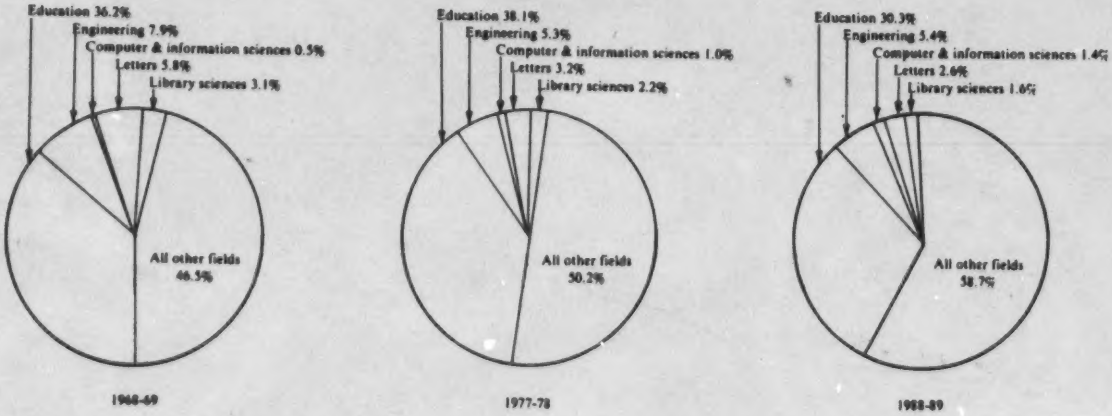

Source: Table 14.

**Figure 14.—Percent distribution of bachelor's degrees, by field of study: 1968-69 to 1988-89**




Source: Table 15.

**Figure 15.—Percent distribution of master's degrees, by field of study: 1968-69 to 1988-89**




Source: Table 16.



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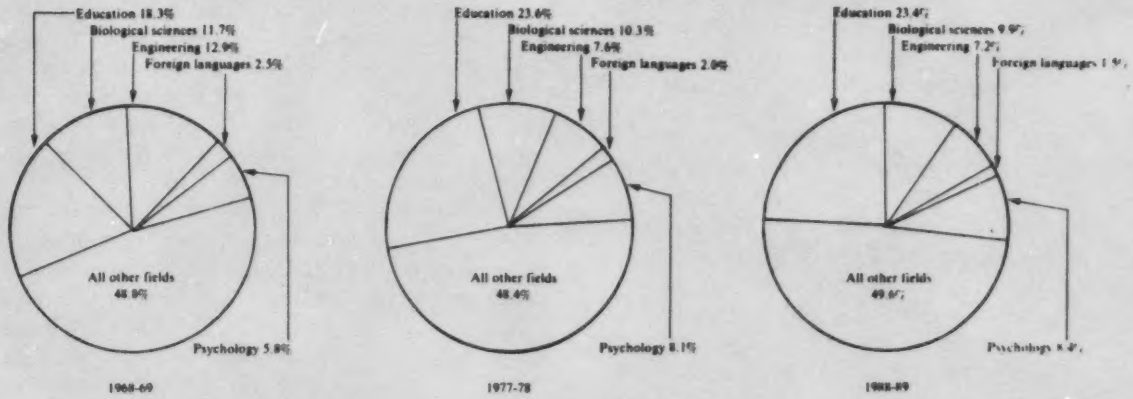
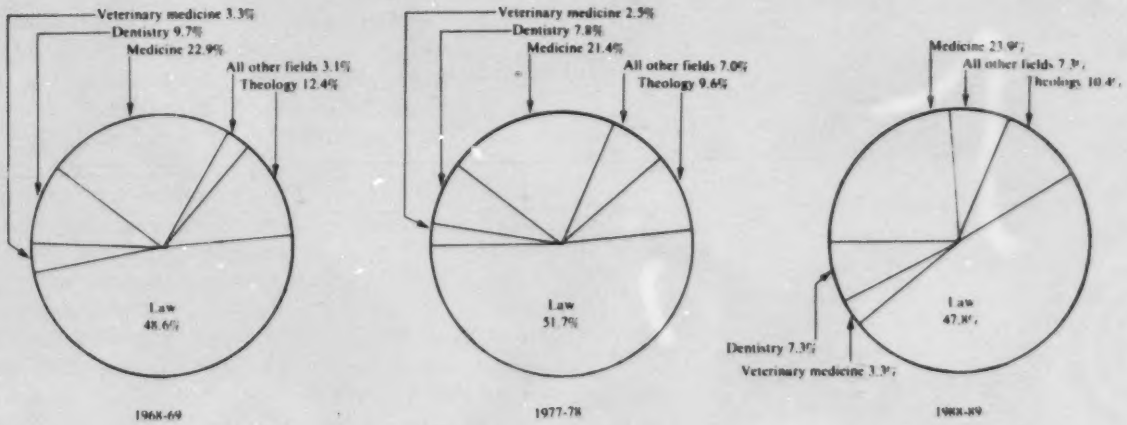
**Figure 16.—Percent distribution of doctor's degrees, by field of study: 1968-69 to 1988-89**




Source: Table 17.

**Figure 17.—Percent distribution of first professional degrees, by field of study: 1968-69 to 1988-89**




Source: Derived from table 27.



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# Degrees by Field

Projections of bachelor's, master's, and doctor's degrees for the 20 major fields of study by sex are shown in tables 18 through 26. Projections of first-professional degrees are shown in table 27.

Thirteen of the 21 fields at the bachelor's level are expected to increase between 1977-78 and 1988-89. The largest increases are expected in computer and information sciences, 40.4 percent (7,201 to 10,110); communications, 39.0 percent (25,400 to 35,300); engineering, 37.3 percent (46,869 to 64,340); and engineering technologies, 36.2 percent (8,785 to 11,970). Other increases are expected in health professions, 23.6 percent (59,434 to 73,470) and agriculture and natural resources, 26.1 percent (22,650 to 28,550).

Significant decreases from 1977-78 to 1988-89 are expected in education, 46.0 percent (136,079 to 73,530); library sciences, 39.4 percent (693 to 420); letters, 35.4 percent (44,334 to 28,640); mathematics and statistics, 34.9 percent (12,569 to 8,180); and social sciences, 33.9 percent (116,084 to 76,720) (figure 18).

The largest increases at the master's level are expected in public affairs and services, 37.7 percent (19,953 to 27,480); computer and information sciences, 36.3 percent (3,038 to 4,140); health professions, 34.9 percent (14,325 to 19,330); and agriculture and natural resources, 27.3 percent (4,023 to 5,120). Significant decreases are expected in foreign languages, 33.2 percent (2,726 to 1,820); library sciences, 29.6 percent (6,914 to 4,870); mathematics and statistics, 28.2 percent (3,373 to 2,420); education, 24.6 percent (118,582 to 89,460); and letters, 23.0 percent (10,011 to 7,710) (figure 19).

Between 1977-78 and 1988-89, doctor's degrees are expected to increase in public affairs and services, 36.7 percent (395 to 540); agriculture and natural resources, 9.2 percent (971 to 1,060); and health professions, 5.5 percent (654 to 690). Significant decreases are expected in foreign languages, 35.3 percent (649 to 420); mathematics and statistics, 31.7 percent (805 to 550); and letters, 29.9 percent (2,069 to 1,450) (figure 20).

Several fields beyond the bachelor's level are expected to experience decreases toward the end of the projection period. However, a large determinant of this trend is the expected decline of total degrees across all levels.

At the bachelor's level, the decrease in the number of traditional college-age students is expected to result in reduced numbers of bachelor's degrees. Some bachelor's fields will continue to decline due to decreased enrollments in these fields; while, other fields such as engineering, physical sciences, and computer and information sciences will increase as enrollment expands due to increased job availability and high salaries. Although the first-year graduate enrollment is declining in engineering and physical sciences, it may be that graduates in these fields are postponing graduate studies to accept attractive salary offers. For example information from the National Science Foundation[9] reports that for the years 1973, 1975, and 1977, median salaries for engineers, computer and physical scientists were high relative to other salaries.

Methodology and assumptions underlying the projections of degrees by field of study are shown in appendixes A and B, section A.2 and section B.2. Independent data sources considered in making these projections were survey data from Engineers Joint Council for engineering degrees; survey data from the American Institute of Certified Public Accountants for bachelor's degrees in accounting, and data from the Health Resources Administration, Bureau of Health Manpower, for first-professional degrees in the health fields.

# Bachelor's Degrees by Field

Although the bachelor's degree projections are not empirically linked to market demands, most field expectations are in line with the results from a NCES survey on recent college graduates, *Survey of 1976-77 Recent College Graduates*[10]. According to this survey, those who majored in engineering, computer and information sciences, and health professions had the lowest underemployment rate. Underemployed college graduates were defined in this study as "those not working in an occupation for which their credentials would seem to qualify them and who report that, in their opinion, their jobs do not require a college degree." The underemployment rate for graduates in the health professions was less than 2.5 percent. Degrees in the health profession are expected to increase 23.6 percent (59,434 to 73,470) between 1977-78 and 1988-89. The Bureau of Labor Statistics reports that the demand for nurses is expected to increase 49.6 percent by 1990.

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[9]National Science Foundation, *Detailed Statistics Tables, Characteristics of Doctoral Scientist and Engineers in the United States*: 1977, Washington, D. C.

[10]National Center for Education Statistics, *op. cit.*

**Figure 18.—Percent change of selected bachelor's fields from 1977-78 to 1988-89**

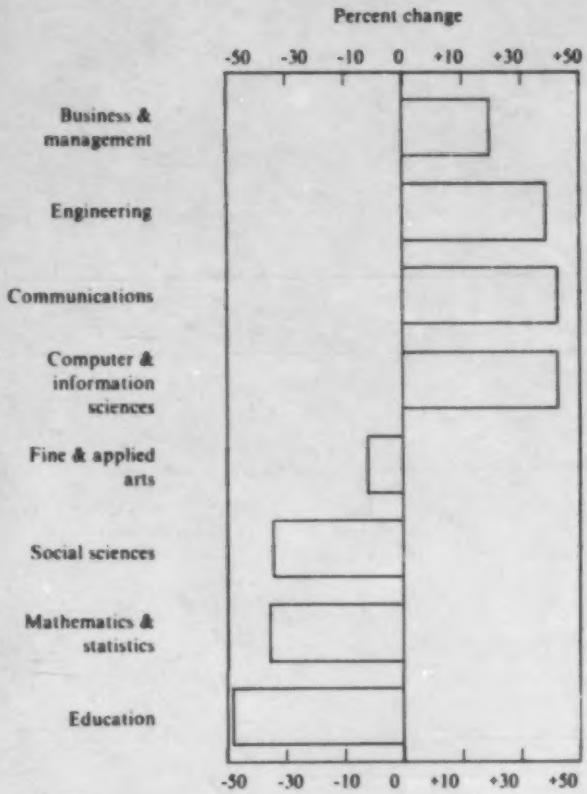



**Figure 19.—Percent change of selected master's fields from 1977-78 to 1988-89**

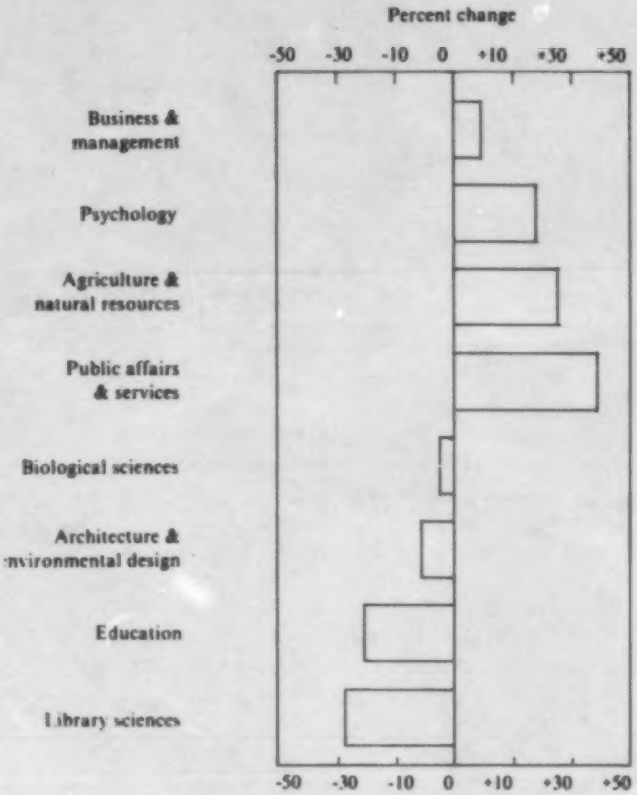
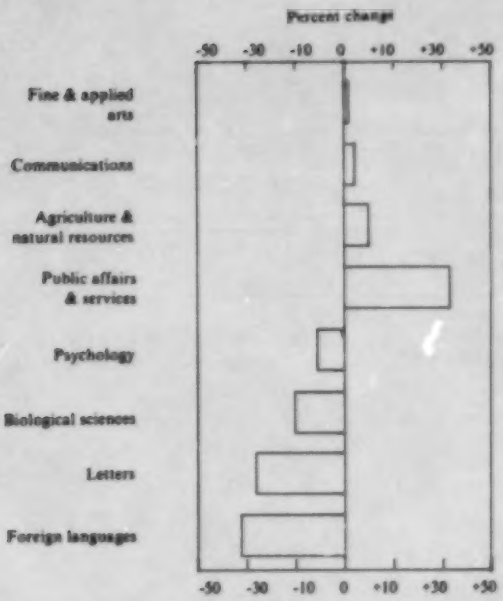


Figure 28.—Percent change of selected doctor's fields from 1977-78 to 1988-89




Engineering graduates, in addition to having a low underemployment rate (6 percent) also received the highest average salary of graduates in the NCES survey. Engineering degrees are expected to increase 37.3 percent from 1977-78 to 1988-89 (46,869 to 64,340) with a peak of 76,060 in 1981-82. Over the same period, degrees in engineering technologies are expected to increase 36.2 percent (8,785 to 11,970).

The underemployment rates for business and management and education were lower than the average rate for all fields and less than half the rate for psychology and social sciences. While business and management degrees are expected to increase 22.9 percent, education degrees are expected to decrease 46.0 percent (136,079 to 73,530). The projected decreases in education are a continuation of decreases from 1973-74 to 1977-78 which undoubtedly resulted in part from the large amount of publicity given to teacher surpluses (see chapter III for a more detailed analysis of teacher supply and demand.) Thus, students were aware of the decreased demand for teachers and subsequently reacted to the oversupply. However, as the job outlook for teachers improves in the 1980's, projections of education degrees based on rapid decreases in this field (table 18), might prove to be too low, especially in the late 1980's.

Graduates in the social sciences and public affairs and services fields had a high underemployment rate (33 percent). From 1977-78 to 1988-89, the number of degrees in social sciences is expected to decrease approximately the same percentage (33.9 percent). However, the number of degrees in public affairs and services is expected to increase 23.3 percent because of significant increases in the subfields, law enforcement and corrections and social work. According to Bureau of Labor Statistics, job opportunities are expected to be good in social work. In recent years, law enforcement and corrections increased greatly and is expected to contribute to the overall increases in public affairs and services in the future.

Graduates in psychology and several humanities fields experienced high underemployment rates (35 percent or more). The underemployment rates for foreign languages, letters, and fine and applied arts were more than 40 percent. In line with these job market statistics, psychology degrees are expected to decrease 23.4 percent from 44,559 in 1977-78 to 34,110 in 1988-89 and the total for the humanities fields are expected to decrease 10.4 percent from 132,665 to 118,890. Within humanities, decreases are expected in foreign languages, 32.8 percent (12,730 to 8,550); letters, 35.4 percent (44,334 to 28,640); and fine and applied arts, 9.4 percent (40,951 to 37,100).

Graduates in mathematics and statistics had an average underemployment rate of about 20 percent. But degrees in mathematics and statistics are expected to decrease 34.9 percent (12,569 to 8,180). This field has decreased continually since 1968-69. Graduates unable to find jobs as mathematicians usually opt for jobs in actuary, statistics, or computer work. In spite of these other choices, BLS reports that graduates seeking jobs as mathematicians will face keen competition in the 1980's.

The underemployment rates for graduates in the physical sciences and biological sciences were much lower than the humanities and social sciences. Slight increases are expected in physical sciences, 7.6 percent (22,986 to 24,740) and biological sciences, 6.8 percent (51,502 to 55,030). For graduates in the biological sciences, BLS reports that demand for life scientists is high. However, at the bachelor's level, competition will be keen as the number of graduates will exceed openings.

## Master's Degrees by Field

Education is the largest single master's degree field, comprising 38 percent of all master's degrees in 1977-78. The number of master's degrees granted in education increased from 70,231 in 1968-69 to 127,948 in 1975-76, an increase of 82.2 percent and decreased to 118,582 by 1977-78, a decrease of 7.3 percent. The number of degrees in education are expected to further decrease 24.6 percent to 89,460 in 1988-89. The decline in the number of master's degrees granted in education is not as rapid as bachelor's degrees in this field because many of the new teachers hired in the late 1960's and early 1970's continued to work toward master's degrees on a part-time basis. However, the decreased number of new teachers hired in the mid and late 1970's has already resulted in fewer master's degrees earned in education and this trend is expected to continue, at least through the mid-1980's.

The second largest master's field, business and management, is projected to increase 7.3 percent (45,130 to 48,410) from 1977-78 to 1988-89, with a peak of 52,090 by 1982-83. Much of this increase can be attributed to increased job opportunities in this field, especially for business administration graduates with master's degrees.

Increases are also expected in psychology, health professions, and public affairs and services during the projected period. For psychology and health professions, these increases are in line with the results of the NCES survey on recent college graduates that also measured the underemployment rates of graduates with master's degrees. Those who earned master's degrees in psychology had a low underemployment rate (less than 2.0 percent). The number of psychology degrees is expected to increase, 21.7 percent (8,160 to 9,930). The number of degrees in the health professions (where master's degree recipients had an underemployment rate of less than 1.5 percent) is expected to increase 34.9 percent (14,325 to 19,330) from 1977-78 to 1988-89. The job outlook for graduates with master's degrees in social sciences, public affairs and services, and humanities fields is not very good. Degrees in social sciences are expected to decrease 32.5 percent (15,559 to 10,500) over the projection period. In contrast, projections of degrees in public affairs and services are expected to increase 37.7 percent (19,953 to 27,480) reflecting the increased job opportunites in social work. For graduates in the humanities who had the highest underemployment rate (slightly more than 10.0 percent) degrees are expected to decrease 10.2 percent (28,184 to 25,300). With the exception of slight increases in fine and applied arts (9,036 to 9,540) and communications (3,296 to 3,400), the other fields in the humanities are expected to decrease over the projection period—letters (10,011 to 7,170); foreign languages (2,726 to 1,820); and architecture and environmental design (3,115 to 2,830).

## Doctor's Degrees by Field

The overall decline expected in doctor's degrees from 1977-78 to 1988-89 is expected to effect 12 of the 20 fields. Toward the end of the projection period, significant decreases are expected in foreign languages, mathematics and statistics, letters, computer and information sciences, and engineering.

Doctor's degrees in engineering are expected to decrease from 2,440 in 1977-78 to 2,000 by 1988-89 and doctor's degrees in the physical sciences are expected to decrease from 3,133 to 2,450. However, degrees in these fields are not expected to change in their percentages of total doctor's degrees from the mid-80's to the end of the projection period. In light of increased research and development activities[11] and increased undergraduate enrollments in these fields, doctoral outputs in these fields may exceed the levels shown in these projections.

Despite overall declines in doctoral production,

[11]National Science Foundation, *Federal R&D Funding by Budget Function: Fiscal Year 1979-80*, Washington, D.C. 1979.

biological sciences and business and management are expected to increase in the early 1980's before declining toward the end of the projection period. Similarly, degrees in fine and applied arts and psychology are expected to experience slight growth before beginning to decline in the mid 1980's.

## First-Professional Degrees by Field

All fields at the first-professional level are expected to increase from 1977-78 to 1988-89. First-professional degrees in medicine are expected to increase from 14,279 to 17,840. Other expected increases are dentistry, 5.2 percent (5,189 to 5,460); podiatric medicine, 14.2 percent (543 to 620); veterinary medicine, 51.7 percent (1,635 to 2,480); law, 3.6 percent (34,402 to 35,630); and theology, 21.6 percent (6,367 to 7,740). Increases are also expected in the remainder of the first-professional fields: optometry, osteopathic medicine, pharmacy, and chiropractic.

**Table 13.—High school graduates, with projections, by sex of student and control of institution: United States, 1968-69 to 1988-89**

**(In thousands)**

| Year | Total high school graduates | Sex | | Control | |
|---|---|---|---|---|---|
| | | Boys | Girls | Public | Private (estimated) |
| 1968-69 | 2,829 | 1,402 | 1,427 | 2,529 | 300 |
| 1969-70 | 2,896 | 1,433 | 1,463 | 2,596 | 300 |
| 1970-71 | 2,944 | 1,457 | 1,487 | 2,644 | 300 |
| 1971-72 | 3,008 | 1,490 | 1,518 | 2,706 | 302 |
| 1972-73 | 3,043 | 1,503 | 1,540 | 2,737 | 306 |
| 1973-74 | 3,080 | 1,515 | 1,565 | 2,771 | 310 |
| 1974-75 | 3,140 | 1,545 | 1,595 | 2,830 | 310 |
| 1975-76 | 3,155 | 1,554 | 1,601 | 2,844 | 311 |
| 1976-77 | 3,161 | 1,550 | 1,611 | 2,846 | 315 |
| 1977-78 | 3,147 | 1,540 | 1,607 | 2,832 | 315 |
| | | Projected[1] | | | |
| 1978-79 | 3,149 | 1,546 | 1,603 | 2,829 | 320 |
| 1979-80 | 3,093 | 1,519 | 1,574 | 2,773 | 320 |
| 1980-81 | 3,048 | 1,498 | 1,550 | 2,728 | 320 |
| 1981-82 | 2,963 | 1,455 | 1,508 | 2,653 | 310 |
| 1982-83 | 2,822 | 1,385 | 1,437 | 2,502 | 320 |
| 1983-84 | 2,705 | 1,328 | 1,377 | 2,385 | 320 |
| 1984-85 | 2,638 | 1,296 | 1,342 | 2,318 | 320 |
| 1985-86 | 2,625 | 1,290 | 1,335 | 2,315 | 310 |
| 1986-87 | 2,673 | 1,314 | 1,359 | 2,373 | 300 |
| 1987-88 | 2,735 | 1,346 | 1,389 | 2,435 | 300 |
| 1988-89 | 2,651 | 1,305 | 1,346 | 2,341 | 310 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for the years 1978-79 to 1988-89 differ from projections shown in earlier NCES reports.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Statistics of Public Elementary and Secondary Day Schools*, (2) *Statistics of Nonpublic Elementary and Secondary Day Schools*, and (3) *Selected Public and Private Elementary and Secondary Education Statistics*, October 1979.

## Table 14.—Earned degrees, with alternative projections by level and sex of student: United States, 1968-69 to 1988-89

| Year | Bachelor's | | | Master's | | | Doctor's (except first-professional) | | | First-professional | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Men | Women | Total | Men | Women | Total | Men | Women | Total | Men | Women |
| 1968-69 | 729,071 | 410,785 | 318,286 | 193,756 | 121,531 | 72,225 | 26,188 | 22,752 | 3,436 | 35,114 | 33,595 | 1,519 |
| 1969-70 | 792,656 | 451,380 | 341,276 | 208,291 | 125,624 | 82,667 | 29,866 | 25,890 | 3,976 | 34,578 | 32,794 | 1,784 |
| 1970-71 | 839,730 | 475,594 | 364,136 | 230,509 | 138,146 | 92,363 | 32,107 | 27,530 | 4,577 | 37,946 | 35,544 | 2,402 |
| 1971-72 | 887,273 | 500,590 | 386,683 | 251,633 | 149,550 | 102,083 | 33,363 | 28,090 | 5,273 | 43,411 | 40,723 | 2,688 |
| 1972-73 | 922,362 | 518,191 | 404,171 | 263,371 | 154,468 | 108,903 | 34,777 | 28,571 | 6,206 | 50,018 | 46,489 | 3,529 |
| 1973-74 | 945,776 | 527,313 | 418,463 | 277,033 | 157,842 | 119,191 | 33,816 | 27,365 | 6,451 | 53,816 | 48,530 | 5,286 |
| 1974-75 | 922,933 | 504,841 | 418,092 | 292,450 | 161,570 | 130,880 | 34,083 | 26,817 | 7,266 | 55,916 | 48,956 | 6,960 |
| 1975-76 | 925,746 | 504,925 | 420,821 | 311,771 | 167,248 | 144,523 | 34,064 | 26,267 | 7,797 | 62,649 | 52,892 | 9,757 |
| 1976-77 | 919,549 | 495,545 | 424,004 | 317,164 | 167,783 | 149,381 | 33,232 | 25,142 | 8,090 | 63,359 | 52,374 | 10,985 |
| 1977-78 | 921,204 | 487,347 | 433,857 | 311,620 | 161,212 | 150,408 | 32,131 | 23,658 | 8,473 | 66,581 | 52,270 | 14,311 |
| **Intermediate alternative projections[1]** | | | | | | | | | | | | |
| 1978-79 | 933,400 | 494,800 | 438,600 | 314,250 | 158,770 | 155,480 | 32,000 | 23,380 | 8,620 | 67,830 | 52,590 | 15,240 |
| 1979-80 | 948,800 | 499,700 | 449,100 | 315,090 | 155,130 | 159,960 | 32,750 | 23,600 | 9,150 | 68,450 | 52,540 | 15,910 |
| 1980-81 | 951,900 | 502,400 | 449,500 | 315,850 | 152,710 | 163,140 | 32,980 | 23,710 | 9,270 | 69,560 | 53,030 | 16,530 |
| 1981-82 | 965,100 | 503,600 | 461,500 | 315,930 | 153,890 | 162,040 | 32,650 | 23,440 | 9,210 | 70,660 | 53,330 | 17,330 |
| 1982-83 | 956,200 | 501,700 | 454,500 | 316,300 | 154,250 | 162,050 | 31,700 | 22,710 | 8,990 | 71,710 | 53,580 | 18,130 |
| 1983-84 | 941,900 | 496,300 | 445,600 | 313,240 | 152,880 | 160,360 | 31,020 | 22,180 | 8,840 | 72,360 | 53,520 | 18,840 |
| 1984-85 | 921,300 | 488,400 | 432,900 | 313,240 | 152,780 | 160,460 | 30,410 | 21,710 | 8,700 | 72,860 | 53,330 | 19,530 |
| 1985-86 | 918,600 | 478,900 | 439,700 | 311,940 | 151,750 | 160,190 | 29,830 | 21,270 | 8,560 | 73,340 | 53,390 | 19,950 |
| 1986-87 | 896,900 | 468,300 | 428,600 | 310,470 | 150,890 | 159,580 | 29,240 | 20,830 | 8,410 | 73,780 | 53,410 | 20,370 |
| 1987-88 | 892,800 | 462,000 | 430,800 | 301,040 | 148,540 | 152,500 | 28,630 | 20,370 | 8,260 | 74,200 | 53,400 | 20,800 |
| 1988-89 | 891,800 | 458,400 | 433,400 | 295,410 | 146,240 | 149,170 | 27,950 | 19,860 | 8,090 | 74,570 | 53,360 | 21,210 |
| **Low alternative projections[1]** | | | | | | | | | | | | |
| 1978-79 | 927,400 | 490,800 | 436,600 | 300,250 | 150,160 | 150,090 | 31,800 | 23,300 | 8,500 | 61,930 | 47,130 | 14,800 |
| 1979-80 | 917,400 | 480,500 | 436,900 | 304,590 | 145,490 | 159,100 | 31,490 | 22,610 | 8,880 | 62,340 | 47,160 | 15,180 |
| 1980-81 | 908,400 | 473,400 | 435,000 | 304,320 | 144,660 | 159,660 | 30,740 | 21,980 | 8,760 | 63,290 | 47,810 | 15,480 |
| 1981-82 | 898,800 | 465,400 | 433,400 | 297,800 | 141,070 | 156,730 | 29,440 | 20,970 | 8,470 | 64,200 | 48,260 | 15,940 |
| 1982-83 | 875,700 | 456,400 | 419,300 | 293,640 | 138,670 | 154,970 | 28,420 | 20,180 | 8,240 | 65,020 | 48,610 | 16,410 |
| 1983-84 | 848,200 | 445,000 | 403,200 | 283,990 | 133,510 | 150,480 | 27,480 | 19,450 | 8,030 | 65,440 | 48,660 | 16,780 |
| 1984-85 | 818,900 | 432,800 | 386,100 | 278,230 | 130,880 | 147,350 | 26,620 | 18,790 | 7,830 | 65,690 | 48,580 | 17,110 |
| 1985-86 | 805,100 | 419,600 | 385,500 | 269,830 | 127,160 | 142,670 | 25,760 | 18,130 | 7,630 | 65,910 | 48,740 | 17,170 |
| 1986-87 | 776,400 | 406,500 | 369,900 | 261,180 | 123,200 | 137,980 | 24,920 | 17,490 | 7,430 | 66,080 | 48,860 | 17,220 |
| 1987-88 | 770,000 | 396,500 | 373,500 | 253,820 | 119,360 | 134,460 | 23,990 | 16,790 | 7,200 | 66,220 | 48,960 | 17,260 |
| 1988-89 | 755,600 | 390,600 | 365,000 | 242,740 | 114,330 | 128,410 | 23,100 | 16,120 | 6,980 | 66,300 | 49,020 | 17,280 |
| **High alternative projections[1]** | | | | | | | | | | | | |
| 1978-79 | 951,400 | 500,800 | 450,600 | 325,250 | 160,160 | 165,090 | 36,910 | 27,020 | 9,890 | 68,450 | 52,630 | 15,820 |
| 1979-80 | 998,500 | 514,800 | 483,700 | 342,200 | 170,100 | 172,100 | 37,480 | 27,330 | 10,150 | 69,690 | 52,560 | 17,130 |
| 1980-81 | 1,018,300 | 525,500 | 492,800 | 356,550 | 175,600 | 180,950 | 38,300 | 27,690 | 10,610 | 71,710 | 53,310 | 18,400 |
| 1981-82 | 1,059,900 | 534,500 | 525,400 | 369,280 | 180,320 | 188,960 | 39,440 | 28,570 | 10,870 | 73,570 | 53,740 | 19,830 |
| 1982-83 | 1,073,200 | 541,700 | 531,500 | 389,430 | 189,150 | 200,280 | 38,810 | 27,640 | 11,170 | 75,400 | 54,230 | 21,170 |
| 1983-84 | 1,079,200 | 545,700 | 533,500 | 400,350 | 193,230 | 207,120 | 39,140 | 27,670 | 11,470 | 76,610 | 54,410 | 22,200 |
| 1984-85 | 1,077,900 | 545,500 | 532,400 | 414,350 | 198,630 | 215,720 | 39,470 | 27,710 | 11,760 | 77,190 | 54,470 | 22,720 |
| 1985-86 | 1,097,500 | 544,500 | 553,000 | 426,780 | 204,030 | 222,750 | 39,750 | 27,710 | 12,040 | 77,610 | 54,760 | 22,850 |
| 1986-87 | 1,100,900 | 542,700 | 558,200 | 438,010 | 208,230 | 229,780 | 39,900 | 27,620 | 12,280 | 77,990 | 55,020 | 22,970 |
| 1987-88 | 1,117,700 | 544,100 | 573,600 | 447,680 | 212,420 | 235,260 | 39,970 | 27,490 | 12,480 | 78,340 | 55,260 | 23,080 |
| 1988-89 | 1,130,400 | 549,700 | 580,700 | 453,550 | 213,990 | 239,560 | 39,550 | 27,110 | 12,440 | 78,580 | 55,420 | 23,160 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Earned Degrees Conferred by Institutions of Higher Education*, and (2) U.S. Department of Commerce, Bureau of the Census, *Current Population Reports, School Enrollments - Social and Economic Characteristics of Students*, Series P-20, No. 346, October 1979.

## Table 15.—Percent distribution of bachelor's degrees, by field of study and sex: 1968-69 to 1988-89

| Field | Reported | | Projected | | |
|---|---|---|---|---|---|
| | 1968-69 | 1973-74 | 1978-79 | 1983-84 | 1988-89 |
| **Table 15A.—Total** | | | | | |
| Social sciences | 19.0 | 16.3 | 12.0 | 9.7 | 9.6 |
| Psychology | 4.0 | 5.5 | 4.9 | 4.3 | 3.8 |
| Public affairs & services | 0.5 | 2.5 | 4.1 | 4.7 | 5.1 |
| Library sciences | 0.1 | 0.1 | 0.1 | [1] | [1] |
| Architecture & environmental design | 0.5 | 0.8 | 1.0 | 1.0 | 1.0 |
| Fine and applied arts | 4.3 | 4.2 | 4.3 | 4.3 | 4.2 |
| Foreign languages | 2.9 | 2.0 | 1.2 | 0.8 | 1.0 |
| Communications | 0.7 | 1.8 | 2.9 | 3.5 | 4.0 |
| Letters | 9.1 | 6.9 | 4.3 | 3.3 | 3.2 |
| Mathematics & statistics | 3.7 | 2.3 | 1.2 | 0.8 | 0.9 |
| Computer & information sciences | 0.1 | 0.5 | 0.8 | 1.0 | 1.1 |
| Engineering | 5.7 | 4.5 | 6.2 | 7.8 | 7.2 |
| Engineering technologies | 0.6 | 0.8 | 1.0 | 1.2 | 1.3 |
| Physical sciences | 2.9 | 2.2 | 2.5 | 2.8 | 2.8 |
| Biological sciences | 4.8 | 5.1 | 5.7 | 6.1 | 6.2 |
| Agriculture & natural resources | 1.5 | 1.7 | 2.5 | 2.9 | 3.2 |
| Health professions | 2.8 | 4.4 | 6.4 | 7.6 | 8.2 |
| Accounting | 2.7 | 3.1 | 4.7 | 5.2 | 4.9 |
| Business & management | 10.2 | 10.9 | 13.2 | 14.7 | 16.7 |
| Education | 20.4 | 19.6 | 14.3 | 10.7 | 8.2 |
| Other | 3.3 | 4.8 | 6.7 | 7.6 | 8.2 |
| **Table 15B.—Men** | | | | | |
| Social sciences | 21.5 | 18.5 | 13.2 | 10.4 | 9.8 |
| Psychology | 4.1 | 4.9 | 3.6 | 3.1 | 2.3 |
| Public affairs & services | 0.3 | 2.6 | 3.8 | 3.9 | 4.4 |
| Library sciences[1] | - | - | - | - | - |
| Architecture & environmental design | 0.8 | 1.3 | 1.4 | 1.4 | 1.3 |
| Fine and applied arts | 3.1 | 3.0 | 3.1 | 3.0 | 2.6 |
| Foreign languages | 1.4 | 0.9 | 0.6 | 0.4 | 0.4 |
| Communications | 0.7 | 2.0 | 2.8 | 3.3 | 3.5 |
| Letters | 5.9 | 5.2 | 3.7 | 2.9 | 2.8 |
| Mathematics & statistics | 4.1 | 2.4 | 1.3 | 1.0 | 1.0 |
| Computer & information sciences | 0.2 | 0.7 | 1.1 | 1.5 | 1.6 |
| Engineering | 10.0 | 8.0 | 10.9 | 13.4 | 12.6 |
| Engineering technologies | 1.0 | 1.4 | 1.8 | 2.2 | 2.3 |
| Physical sciences | 4.5 | 3.3 | 3.7 | 3.9 | 3.7 |
| Biological sciences | 6.1 | 6.3 | 6.6 | 6.9 | 6.8 |
| Agriculture & natural resources | 2.6 | 2.8 | 3.5 | 4.0 | 4.4 |
| Health professions | 1.1 | 1.8 | 2.4 | 2.7 | 3.2 |
| Accounting | 4.5 | 4.8 | 6.1 | 6.5 | 6.0 |
| Business & management | 16.5 | 17.1 | 18.1 | 18.6 | 20.1 |
| Education | 8.7 | 9.3 | 7.0 | 5.1 | 4.7 |
| Other | 2.8 | 3.8 | 5.2 | 5.9 | 6.2 |
| **Table 15C.—Women** | | | | | |
| Social sciences | 15.8 | 13.5 | 10.7 | 8.9 | 7.3 |
| Psychology | 4.0 | 6.2 | 6.1 | 5.7 | 5.4 |
| Public affairs & services | 0.9 | 2.5 | 4.4 | 5.5 | 5.9 |
| Library sciences | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 |
| Architecture & environmental design | [1] | 0.3 | 0.5 | 0.6 | 0.7 |
| Fine and applied arts | 5.9 | 5.7 | 5.6 | 5.8 | 5.8 |
| Foreign languages | 4.9 | 3.4 | 2.0 | 1.3 | 1.6 |
| Communications | 0.7 | 1.6 | 2.9 | 3.8 | 4.5 |
| Letters | 13.2 | 9.0 | 5.3 | 3.9 | 3.7 |
| Mathematics & statistics | 3.2 | 2.1 | 1.0 | 0.7 | 0.9 |
| Computer & information sciences | [1] | 0.2 | 0.5 | 0.6 | 0.7 |
| Engineering | 0.3 | 0.2 | 1.0 | 1.6 | 1.5 |
| Egineering technologies | [1] | [1] | 0.1 | 0.1 | 0.1 |
| Physical sciences | 0.9 | 0.8 | 1.2 | 1.5 | 1.7 |
| Biological sciences | 3.1 | 3.6 | 4.7 | 5.1 | 5.5 |
| Agriculture & natural resources | 0.1 | 0.4 | 1.3 | 1.7 | 1.9 |
| Health professions | 4.9 | 7.7 | 11.0 | 12.6 | 13.6 |
| Accounting | 0.5 | 1.0 | 3.0 | 3.7 | 3.7 |
| Business & management | 2.1 | 3.1 | 7.7 | 10.4 | 13.1 |
| Education | 35.4 | 32.5 | 22.5 | 17.0 | 12.0 |
| Other | 4.0 | 6.0 | 8.4 | 9.5 | 10.4 |

[1]Less than 0.05.

NOTE.—Data are for 50 States and the District of Columbia for all years.

## Table 16.—Percent distribution of master's degrees, by field of study and sex: 1968-69 to 1988-89

| Field | Reported | | Projected | | |
|---|---|---|---|---|---|
| | 1968-69 | 1973-74 | 1978-79 | 1983-84 | 1988-89 |
| **Table 16A.—Total** | | | | | |
| Social sciences | 8.5 | 6.6 | 4.9 | 4.2 | 3.6 |
| Psychology | 1.9 | 2.4 | 2.7 | 3.0 | 3.4 |
| Public affairs & services | 3.1 | 4.5 | 6.2 | 7.6 | 9.3 |
| Library sciences | 3.1 | 2.9 | 2.0 | 1.7 | 1.6 |
| Architecture & environmental design | 0.6 | 1.0 | 1.0 | 1.0 | 1.0 |
| Fine and applied arts | 3.8 | 2.9 | 3.0 | 3.2 | 3.2 |
| Foreign languages | 2.4 | 1.4 | 0.8 | 0.6 | 0.6 |
| Communications | 0.4 | 1.0 | 1.1 | 1.2 | 1.2 |
| Letters | 5.8 | 4.4 | 3.1 | 2.8 | 2.6 |
| Mathematics & statistics | 3.0 | 1.7 | 1.0 | 0.8 | 0.8 |
| Computer & information sciences | 0.5 | 0.8 | 1.0 | 1.3 | 1.4 |
| Engineering | 7.9 | 5.6 | 5.2 | 5.2 | 5.4 |
| Physical sciences | 3.0 | 2.2 | 1.8 | 1.9 | 2.0 |
| Biological sciences | 3.0 | 2.4 | 2.2 | 2.3 | 2.2 |
| Agriculture & natural resources | 1.3 | 1.1 | 1.3 | 1.5 | 1.7 |
| Health professions | 2.1 | 3.5 | 4.7 | 5.5 | 6.5 |
| Accounting | 0.7 | 0.6 | 1.1 | 1.4 | 1.3 |
| Business & management | 9.4 | 11.2 | 14.8 | 16.5 | 16.4 |
| Education | 36.2 | 40.5 | 37.9 | 33.5 | 30.3 |
| Other | 3.2 | 3.4 | 4.1 | 4.7 | 5.5 |
| **Table 16B.—Men** | | | | | |
| Social sciences | 10.1 | 8.2 | 6.2 | 5.3 | 4.2 |
| Psychology | 2.1 | 2.5 | 2.5 | 2.7 | 2.7 |
| Public affairs & services | 2.4 | 4.4 | 6.1 | 7.9 | 9.7 |
| Library sciences | 0.9 | 1.1 | 0.8 | 0.7 | 0.7 |
| Architecture & environmental design | 0.8 | 1.4 | 1.4 | 1.2 | 1.2 |
| Fine and applied arts | 3.4 | 2.7 | 2.7 | 3.0 | 3.2 |
| Foreign languages | 1.6 | 0.8 | 0.4 | 0.3 | 0.3 |
| Communications | 0.5 | 1.1 | 1.1 | 1.1 | 1.1 |
| Letters | 4.0 | 3.4 | 2.3 | 2.0 | 2.1 |
| Mathematics & statistics | 3.5 | 2.1 | 1.2 | 1.1 | 1.1 |
| Computer & information sciences | 0.8 | 1.3 | 1.6 | 2.1 | 2.2 |
| Engineering | 12.6 | 9.5 | 9.8 | 9.9 | 10.1 |
| Physical sciences | 4.3 | 3.3 | 3.0 | 3.1 | 3.2 |
| Biological sciences | 3.4 | 2.9 | 2.7 | 2.7 | 2.6 |
| Agriculture & natural resources | 2.0 | 1.7 | 2.0 | 2.4 | 2.7 |
| Health professions | 1.6 | 2.4 | 2.7 | 3.0 | 3.3 |
| Accounting | 1.0 | 1.0 | 1.6 | 2.0 | 1.8 |
| Business & management | 14.5 | 18.4 | 24.1 | 26.2 | 26.1 |
| Education | 27.3 | 28.5 | 23.5 | 18.1 | 15.5 |
| Other | 3.3 | 3.3 | 4.4 | 5.2 | 6.2 |
| **Table 16C.—Women** | | | | | |
| Social sciences | 5.9 | 4.5 | 3.5 | 3.2 | 2.9 |
| Psychology | 1.6 | 2.2 | 2.9 | 3.3 | 4.0 |
| Public affairs & services | 4.2 | 4.7 | 6.4 | 7.4 | 8.9 |
| Library sciences | 6.6 | 5.3 | 3.3 | 2.6 | 2.6 |
| Architecture & environmental design | 0.2 | 0.4 | 0.6 | 0.7 | 0.7 |
| Fine and applied arts | 4.6 | 3.1 | 3.3 | 3.4 | 3.3 |
| Foreign languages | 3.8 | 2.2 | 1.2 | 0.9 | 0.9 |
| Communications | 0.3 | 0.8 | 1.1 | 1.3 | 1.2 |
| Letters | 8.8 | 5.7 | 3.9 | 3.5 | 3.2 |
| Mathematics & statistics | 2.1 | 1.3 | 0.7 | 0.6 | 0.6 |
| Computer & information sciences | 0.1 | 0.2 | 0.4 | 0.6 | 0.6 |
| Engineering | 0.2 | 0.3 | 0.6 | 0.7 | 0.7 |
| Physical sciences | 0.9 | 0.7 | 0.6 | 0.7 | 0.8 |
| Biological sciences | 2.3 | 1.7 | 1.7 | 1.9 | 1.9 |
| Agriculture & natural resources | 0.2 | 0.2 | 0.6 | 0.8 | 0.7 |
| Health professions | 2.9 | 4.9 | 6.8 | 8.0 | 9.8 |
| Accounting | 0.1 | 0.2 | 0.6 | 0.8 | 0.8 |
| Business & management | 0.8 | 1.6 | 5.4 | 7.2 | 6.8 |
| Education | 51.4 | 56.4 | 52.5 | 48.3 | 44.8 |
| Other | 3.1 | 3.5 | 3.7 | 4.2 | 4.9 |

NOTE.—Data are for the 50 States and the District of Columbia for all years.

## Table 17.—Percent distribution of doctor's degrees, by field of study and sex: 1968-69 to 1988-89

| Field | Reported | | Projected | | |
|---|---|---|---|---|---|
| | 1968-69 | 1973-74 | 1978-79 | 1983-84 | 1988-89 |
| **Table 17A.—Total** | | | | | |
| Social sciences | 11.3 | 12.7 | 11.6 | 10.9 | 10.9 |
| Psychology | 5.8 | 6.9 | 8.2 | 8.4 | 8.4 |
| Public affairs & services | 0.5 | 0.7 | 1.3 | 1.7 | 1.9 |
| Library sciences | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 |
| Architecture & environmental design | 0.1 | 0.2 | 0.3 | 0.2 | 0.3 |
| Fine and applied arts | 2.6 | 1.7 | 2.2 | 2.6 | 2.6 |
| Foreign languages | 2.5 | 2.7 | 2.0 | 1.5 | 1.5 |
| Communications | 0.1 | 0.5 | 0.6 | 0.7 | 0.7 |
| Letters | 6.6 | 7.8 | 6.4 | 5.4 | 5.2 |
| Mathematics & statistics | 4.2 | 3.0 | 2.3 | 2.0 | 2.0 |
| Computer & information sciences | 0.2 | 0.6 | 0.6 | 0.6 | 0.6 |
| Engineering | 12.9 | 9.8 | 7.3 | 7.2 | 7.2 |
| Physical sciences | 14.7 | 10.7 | 9.5 | 8.8 | 8.8 |
| Biological sciences | 11.7 | 10.2 | 10.5 | 10.5 | 9.9 |
| Agriculture & natural resources | 3.4 | 2.8 | 3.1 | 3.6 | 3.8 |
| Health professions | 1.1 | 1.7 | 2.1 | 2.5 | 2.5 |
| Accounting | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| Business & management | 1.9 | 2.7 | 2.7 | 2.8 | 2.8 |
| Education | 18.3 | 21.6 | 23.4 | 23.3 | 23.4 |
| Other | 1.9 | 3.3 | 5.6 | 7.0 | 7.2 |
| **Table 17B.—Men** | | | | | |
| Social sciences | 11.4 | 12.8 | 12.0 | 11.4 | 11.4 |
| Psychology | 5.1 | 6.0 | 6.9 | 7.4 | 7.4 |
| Public affairs & services | 0.4 | 0.7 | 1.2 | 1.5 | 1.8 |
| Library sciences | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Architecture & environmental design | 0.1 | 0.2 | 0.3 | 0.2 | 0.3 |
| Fine and applied arts | 2.5 | 1.6 | 1.9 | 2.1 | 2.1 |
| Foreign languages | 1.9 | 1.9 | 1.2 | 0.9 | 0.9 |
| Communications | 0.1 | 0.5 | 0.6 | 0.6 | 0.7 |
| Letters | 5.6 | 6.5 | 5.3 | 4.4 | 4.4 |
| Mathematics & statistics | 4.5 | 3.4 | 2.7 | 2.3 | 2.3 |
| Computer & information sciences | 0.3 | 0.7 | 0.8 | 0.7 | 0.7 |
| Engineering | 14.8 | 11.9 | 9.7 | 9.8 | 9.8 |
| Physical sciences | 16.1 | 12.3 | 11.7 | 11.0 | 10.9 |
| Biological sciences | 11.3 | 10.0 | 10.8 | 11.0 | 10.1 |
| Agriculture & natural resources | 3.8 | 3.3 | 4.0 | 4.6 | 4.9 |
| Health professions | 1.1 | 1.6 | 1.8 | 2.0 | 2.0 |
| Accounting | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 |
| Business & management | 2.2 | 3.2 | 3.3 | 3.6 | 3.5 |
| Education | 16.9 | 19.4 | 19.3 | 18.1 | 18.1 |
| Other | 1.7 | 3.5 | 6.2 | 8.0 | 8.3 |
| **Table 17C.—Women** | | | | | |
| Social sciences | 10.7 | 12.2 | 10.7 | 9.8 | 9.9 |
| Psychology | 10.0 | 10.7 | 11.7 | 11.0 | 11.0 |
| Public affairs & services | 1.0 | 0.8 | 1.6 | 2.3 | 2.2 |
| Library sciences | 0.1 | 0.4 | 0.3 | 0.3 | 0.4 |
| Architecture & environmental design | [1] | 0.1 | 0.2 | 0.2 | 0.2 |
| Fine and applied arts | 3.5 | 2.2 | 3.0 | 3.6 | 3.7 |
| Foreign languages | 6.8 | 6.3 | 4.1 | 3.1 | 3.1 |
| Communications | 0.1 | 0.4 | 0.7 | 0.8 | 0.7 |
| Letters | 13.1 | 13.1 | 9.3 | 7.8 | 7.2 |
| Mathematics & statistics | 2.0 | 1.6 | 1.4 | 1.2 | 1.1 |
| Computer & information sciences | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Engineering | 0.3 | 0.9 | 0.7 | 0.6 | 0.6 |
| Physical sciences | 6.0 | 3.9 | 3.6 | 3.4 | 3.5 |
| Biological sciences | 13.6 | 10.8 | 9.5 | 9.3 | 9.3 |
| Agriculture & natural resources | 0.4 | 0.5 | 0.7 | 0.8 | 1.0 |
| Health professions | 1.0 | 2.0 | 2.9 | 3.6 | 3.6 |
| Accounting | 0.1 | 0.1 | 0.1 | 0.1 | 0.. |
| Business & management | 0.3 | 0.7 | 0.9 | 0.9 | 1.0 |
| Education | 27.9 | 30.6 | 34.6 | 36.4 | 36.6 |
| Other | 2.9 | 2.5 | 3.7 | 4.5 | 4.6 |

[1] Less than 0.05.

NOTE.—Data are for the 50 States and the District of Columbia for all years.

## Table 18.—Earned bachelor's degrees, with projections, by field of study: United States, 1968-69 to 1988-89

### Table 18A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 172,616 | 138,478 | 29,295 | 3,843 | 1,000 |
| 1969-70 | 190,395 | 151,391 | 33,536 | 4,414 | 1,054 |
| 1970-71 | 205,931 | 157,818 | 37,880 | 9,220 | 1,013 |
| 1971-72 | 217,768 | 161,081 | 43,093 | 12,605 | 989 |
| 1972-73 | 226,131 | 159,434 | 47,695 | 17,843 | 1,159 |
| 1973-74 | 230,954 | 154,019 | 51,821 | 23,950 | 1,164 |
| 1974-75 | 218,926 | 138,709 | 50,988 | 28,160 | 1,069 |
| 1975-76 | 213,853 | 129,864 | 49,908 | 33,238 | 843 |
| 1976-77 | 204,824 | 120,329 | 47,373 | 36,341 | 781 |
| 1977-78 | 198,576 | 116,084 | 44,559 | 37,240 | 693 |
| | | | Projected[1] | | |
| 1978-79 | 196,250 | 111,870 | 45,500 | 38,210 | 670 |
| 1979-80 | 193,730 | 107,710 | 45,320 | 40,080 | 620 |
| 1980-81 | 189,240 | 102,020 | 44,350 | 42,320 | 550 |
| 1981-82 | 185,590 | 97,500 | 44,300 | 43,290 | 500 |
| 1982-83 | 181,900 | 94,730 | 42,780 | 43,910 | 480 |
| 1983-84 | 176,710 | 91,210 | 40,950 | 44,080 | 470 |
| 1984-85 | 170,420 | 87,210 | 38,890 | 43,870 | 450 |
| 1985-86 | 167,850 | 84,700 | 37,940 | 44,760 | 450 |
| 1986-87 | 161,750 | 80,860 | 36,020 | 44,440 | 430 |
| 1987-88 | 159,140 | 78,580 | 34,980 | 45,160 | 420 |
| 1988-89 | 157,170 | 76,720 | 34,110 | 45,920 | 420 |

### Table 18B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 127,905 | 3,477 | 31,588 | 21,493 | 5,197 | 66,150 |
| 1969-70 | 134,675 | 4,105 | 35,901 | 20,895 | 5,959 | 67,815 |
| 1970-71 | 139,833 | 5,570 | 30,394 | 19,945 | 10,802 | 73,122 |
| 1971-72 | 144,713 | 6,440 | 33,831 | 18,849 | 12,340 | 73,252 |
| 1972-73 | 147,220 | 6,962 | 36,017 | 18,964 | 14,317 | 70,960 |
| 1973-74 | 148,445 | 7,822 | 39,730 | 18,840 | 17,096 | 64,957 |
| 1974-75 | 143,439 | 8,226 | 40,782 | 17,606 | 19,248 | 57,577 |
| 1975-76 | 139,552 | 9,146 | 42,138 | 15,471 | 21,282 | 51,515 |
| 1976-77 | 135,244 | 9,222 | 41,793 | 13,944 | 23,214 | 47,071 |
| 1977-78 | 132,665 | 9,250 | 40,951 | 12,730 | 25,400 | 44,334 |
| | | | Projected[1] | | | |
| 1978-79 | 129,060 | 9,350 | 40,050 | 11,440 | 26,670 | 41,550 |
| 1979-80 | 128,580 | 9,570 | 41,020 | 10,330 | 28,820 | 38,840 |
| 1980-81 | 125,780 | 9,700 | 41,160 | 8,910 | 30,560 | 35,450 |
| 1981-82 | 125,210 | 9,870 | 42,110 | 9,010 | 31,440 | 32,780 |
| 1982-83 | 123,750 | 9,850 | 41,530 | 7,720 | 32,400 | 32,250 |
| 1983-84 | 122,440 | 9,730 | 40,530 | 7,750 | 32,920 | 31,510 |
| 1984-85 | 120,160 | 9,540 | 39,220 | 7,750 | 33,070 | 30,580 |
| 1985-86 | 120,560 | 9,480 | 38,880 | 7,990 | 33,790 | 30,420 |
| 1986-87 | 118,380 | 9,380 | 37,650 | 8,020 | 33,800 | 29,530 |
| 1987-88 | 118,670 | 9,340 | 37,290 | 8,220 | 34,540 | 29,280 |
| 1988-89 | 118,890 | 9,300 | 37,100 | 8,550 | 35,300 | 28,640 |

See footnotes at end of table.

## Table 18.—Earned bachelor's degrees, with projections, by field of study: United States, 1968-69 to 1988-89—Cont.

### Table 18C.—Engineering, mathematics, and physical sciences

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Engineering technologies | Physical sciences |
|---|---|---|---|---|---|---|
| 1968-69 | 95,139 | 27,209 | 933 | 41,248 | 4,269 | 21,480 |
| 1969-70 | 100,103 | 27,442 | 1,544 | 44,479 | 5,199 | 21,439 |
| 1970-71 | 98,647 | 24,801 | 2,388 | 44,898 | 5,148 | 21,412 |
| 1971-72 | 99,024 | 23,713 | 3,402 | 45,392 | 5,772 | 20,745 |
| 1972-73 | 99,332 | 23,067 | 4,304 | 46,411 | 4,854 | 20,696 |
| 1973-74 | 97,855 | 21,635 | 4,756 | 42,840 | 7,446 | 21,178 |
| 1974-75 | 90,844 | 18,181 | 5,033 | 39,388 | 7,464 | 20,778 |
| 1975-76 | 89,432 | 15,984 | 5,652 | 38,388 | 7,943 | 21,465 |
| 1976-77 | 92,383 | 14,196 | 6,407 | 40,936 | 8,347 | 22,497 |
| 1977-78 | 98,410 | 12,569 | 7,201 | 46,869 | 8,785 | 22,986 |
| | | | Projected[1] | | | |
| 1978-79 | 108,560 | 10,790 | 7,480 | 58,010 | 8,960 | 23,320 |
| 1979-80 | 115,080 | 9,260 | 8,040 | 64,200 | 9,570 | 24,010 |
| 1980-81 | 119,830 | 8,120 | 8,730 | 68,210 | 10,110 | 24,660 |
| 1981-82 | 129,090 | 7,940 | 9,130 | 76,060 | 10,550 | 25,410 |
| 1982-83 | 130,030 | 7,960 | 9,660 | 75,130 | 10,910 | 26,370 |
| 1983-84 | 128,500 | 7,940 | 9,810 | 73,400 | 11,160 | 26,190 |
| 1984-85 | 126,140 | 7,900 | 9,830 | 71,470 | 11,330 | 25,610 |
| 1985-86 | 123,940 | 8,020 | 9,800 | 69,330 | 11,480 | 25,310 |
| 1986-87 | 121,180 | 8,000 | 9,780 | 67,060 | 11,560 | 24,780 |
| 1987-88 | 119,850 | 8,100 | 9,940 | 65,490 | 11,730 | 24,590 |
| 1988-89 | 119,340 | 8,180 | 10,110 | 64,340 | 11,970 | 24,740 |

### Table 18D.—Life sciences & miscellaneous fields

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & management: Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 66,184 | 34,989 | 10,965 | 20,230 | 267,227 | 20,032 | 74,501 | 148,554 | 24,140 |
| 1969-70 | 71,594 | 37,031 | 12,382 | 22,181 | 295,889 | 21,183 | 84,871 | 161,904 | 27,931 |
| 1970-71 | 73,641 | 35,743 | 12,672 | 25,226 | 321,678 | 22,099 | 93,428 | 176,571 | 29,580 |
| 1971-72 | 79,420 | 37,293 | 13,516 | 28,611 | 346,348 | 24,801 | 97,208 | 191,172 | 33,167 |
| 1972-73 | 90,553 | 42,233 | 14,756 | 33,564 | 359,126 | 27,947 | 98,883 | 194,210 | 38,086 |
| 1973-74 | 106,052 | 48,340 | 16,253 | 41,459 | 362,470 | 29,341 | 103,043 | 185,181 | 44,905 |
| 1974-75 | 118,359 | 51,741 | 17,528 | 49,090 | 351,365 | 31,116 | 102,706 | 166,969 | 50,574 |
| 1975-76 | 127,635 | 54,275 | 19,402 | 53,958 | 355,274 | 35,806 | 107,630 | 154,758 | 57,080 |
| 1976-77 | 132,400 | 53,605 | 21,467 | 57,328 | 354,698 | 39,183 | 112,905 | 143,658 | 58,952 |
| 1977-78 | 133,586 | 51,502 | 22,650 | 59,434 | 357,967 | 40,145 | 121,126 | 136,079 | 60,617 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 136,240 | 53,070 | 23,210 | 59,960 | 363,290 | 43,420 | 123,560 | 133,620 | 62,690 |
| 1979-80 | 142,080 | 54,800 | 24,580 | 62,700 | 369,330 | 46,470 | 127,990 | 129,130 | 65,740 |
| 1980-81 | 148,330 | 55,890 | 25,740 | 66,700 | 368,720 | 48,490 | 131,170 | 121,470 | 67,590 |
| 1981-82 | 152,130 | 57,480 | 26,430 | 68,220 | 373,080 | 50,070 | 135,100 | 117,140 | 70,770 |
| 1982-83 | 153,740 | 57,570 | 27,080 | 69,090 | 366,780 | 50,120 | 137,010 | 108,130 | 71,520 |
| 1983-84 | 153,920 | 57,080 | 27,550 | 69,290 | 360,330 | 48,880 | 138,930 | 100,940 | 71,580 |
| 1984-85 | 152,820 | 56,140 | 27,800 | 68,880 | 351,760 | 47,350 | 140,000 | 93,390 | 71,020 |
| 1985-86 | 154,800 | 55,980 | 27,920 | 70,900 | 351,450 | 46,360 | 144,160 | 88,840 | 72,090 |
| 1986-87 | 153,350 | 54,910 | 28,000 | 70,440 | 342,240 | 44,810 | 144,040 | 81,950 | 71,440 |
| 1987-88 | 154,830 | 54,870 | 28,070 | 71,890 | 340,310 | 44,040 | 146,680 | 77,270 | 72,320 |
| 1988-89 | 157,050 | 55,030 | 28,550 | 73,470 | 339,350 | 43,520 | 148,820 | 73,530 | 73,480 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (a) *Earned Degrees Conferred by Institutions of Higher Education*, (b) *A Taxonomy of Instructional Programs in Higher Education*; (2) Engineering Manpower Commission, Engineers Joint Council publication: *Engineering and Technology Enrollments Fall 1978*; and (3) American Institute of Certified Public Accountants publication: *The Supply of Accounting Graduates and the Demand for Public Accounting Recruits*, Spring 1979.

## Table 19.—Earned bachelor's degrees conferred on men, with projections, by field of study: United States 1968-69 to 1988-89

### Table 19A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 106,114 | 88,243 | 16,714 | 1,093 | 64 |
| 1969-70 | 117,026 | 96,697 | 18,996 | 1,247 | 86 |
| 1970-71 | 125,152 | 99,319 | 21,029 | 4,723 | 81 |
| 1971-72 | 132,196 | 102,365 | 23,159 | 6,606 | 66 |
| 1972-73 | 135,956 | 101,373 | 24,976 | 9,520 | 87 |
| 1973-74 | 136,767 | 97,348 | 25,705 | 13,628 | 86 |
| 1974-75 | 126,214 | 86,450 | 24,190 | 15,494 | 80 |
| 1975-76 | 121,943 | 80,235 | 22,832 | 18,818 | 58 |
| 1976-77 | 113,267 | 72,542 | 20,553 | 20,101 | 71 |
| 1977-78 | 105,788 | 68,506 | 18,348 | 18,854 | 80 |
| | | | Projected[1] | | |
| 1978-79 | 102,880 | 65,100 | 18,870 | 18,830 | 80 |
| 1979-80 | 99,000 | 61,560 | 18,380 | 18,980 | 80 |
| 1980-81 | 94,880 | 57,830 | 17,840 | 19,130 | 80 |
| 1981-82 | 89,820 | 53,340 | 17,120 | 19,280 | 80 |
| 1982-83 | 88,650 | 52,840 | 16,300 | 19,430 | 80 |
| 1983-84 | 86,740 | 51,740 | 15,340 | 19,580 | 80 |
| 1984-85 | 84,490 | 50,350 | 14,330 | 19,730 | 80 |
| 1985-86 | 81,970 | 48,690 | 13,320 | 19,880 | 80 |
| 1986-87 | 79,520 | 47,100 | 12,320 | 20,030 | 70 |
| 1987-88 | 77,680 | 45,970 | 11,460 | 20,180 | 70 |
| 1988-89 | 76,240 | 45,150 | 10,690 | 20,330 | 70 |

### Table 19B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 49,241 | 3,327 | 12,933 | 5,778 | 3,003 | 24,200 |
| 1969-70 | 53,272 | 3,888 | 15,347 | 5,531 | 3,533 | 24,973 |
| 1970-71 | 57,772 | 4,906 | 12,256 | 5,075 | 6,989 | 28,546 |
| 1971-72 | 61,254 | 5,667 | 13,580 | 4,748 | 7,964 | 29,295 |
| 1972-73 | 63,224 | 6,042 | 14,267 | 4,608 | 9,074 | 29,233 |
| 1973-74 | 64,885 | 6,665 | 15,821 | 4,529 | 10,536 | 27,334 |
| 1974-75 | 62,572 | 6,791 | 15,532 | 4,121 | 11,455 | 24,673 |
| 1975-76 | 62,424 | 7,396 | 16,491 | 3,664 | 12,458 | 22,415 |
| 1976-77 | 60,182 | 7,249 | 16,166 | 3,371 | 12,932 | 20,464 |
| 1977-78 | 58,205 | 7,054 | 15,572 | 3,074 | 13,480 | 19,025 |
| | | | Projected[1] | | | |
| 1978-79 | 57,310 | 7,150 | 15,410 | 2,820 | 13,810 | 18,120 |
| 1979-80 | 57,170 | 7,320 | 15,610 | 2,580 | 14,660 | 17,000 |
| 1980-81 | 56,770 | 7,310 | 15,790 | 2,320 | 15,490 | 15,860 |
| 1981-82 | 55,540 | 7,330 | 15,650 | 2,310 | 15,730 | 14,520 |
| 1982-83 | 55,050 | 7,160 | 15,360 | 2,020 | 16,100 | 14,410 |
| 1983-84 | 54,080 | 6,890 | 14,830 | 1,980 | 16,210 | 14,170 |
| 1984-85 | 52,700 | 6,560 | 14,190 | 1,930 | 16,170 | 13,850 |
| 1985-86 | 51,170 | 6,500 | 13,370 | 1,880 | 15,920 | 13,500 |
| 1986-87 | 49,710 | 6,280 | 12,710 | 1,820 | 15,780 | 13,120 |
| 1987-88 | 48,830 | 6,230 | 12,170 | 1,800 | 15,760 | 12,870 |
| 1988-89 | 48,290 | 6,150 | 11,760 | 1,800 | 15,890 | 12,690 |

See footnote at end of table.

## Table 19.—Earned bachelor's degrees conferred on men, with projections, by field of study: United States 1968-69 to 1988-89—Cont.

### Table 19C.—Engineering, mathematics, and physical sciences

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Engineering technologies | Physical sciences |
|---|---|---|---|---|---|---|
| 1968-69 | 81,600 | 17,040 | 812 | 40,939 | 4,249 | 18,560 |
| 1969-70 | 86,340 | 17,177 | 1,345 | 44,149 | 5,147 | 18,522 |
| 1970-71 | 85,538 | 15,369 | 2,064 | 44,540 | 5,106 | 18,459 |
| 1971-72 | 85,696 | 14,454 | 2,941 | 44,912 | 5,726 | 17,663 |
| 1972-73 | 85,738 | 13,796 | 3,664 | 45,850 | 4,802 | 17,626 |
| 1973-74 | 83,931 | 12,791 | 3,976 | 42,149 | 7,341 | 17,674 |
| 1974-75 | 77,496 | 10,586 | 4,080 | 38,566 | 7,272 | 16,992 |
| 1975-76 | 76,233 | 9,475 | 4,534 | 37,093 | 7,778 | 17,353 |
| 1976-77 | 78,240 | 8,303 | 4,876 | 38,914 | 8,151 | 17,996 |
| 1977-78 | 82,782 | 7,398 | 5,349 | 43,405 | 8,540 | 18,090 |
| | | | Projected[1] | | | |
| 1978-79 | 92,300 | 6,340 | 5,380 | 53,780 | 8,700 | 18,100 |
| 1979-80 | 97,740 | 5,380 | 5,900 | 58,730 | 9,280 | 18,450 |
| 1980-81 | 102,120 | 5,000 | 6,510 | 62,000 | 9,790 | 18,820 |
| 1981-82 | 109,280 | 4,860 | 6,720 | 68,450 | 10,200 | 19,050 |
| 1982-83 | 110,130 | 4,840 | 7,210 | 67,740 | 10,550 | 19,790 |
| 1983-84 | 108,630 | 4,780 | 7,350 | 66,270 | 10,780 | 19,450 |
| 1984-85 | 106,490 | 4,710 | 7,190 | 64,660 | 10,940 | 18,990 |
| 1985-86 | 103,590 | 4,630 | 7,060 | 62,520 | 11,060 | 18,320 |
| 1986-87 | 100,980 | 4,540 | 6,970 | 60,530 | 11,140 | 17,800 |
| 1987-88 | 99,260 | 4,480 | 7,030 | 59,030 | 11,300 | 17,420 |
| 1988-89 | 98,230 | 4,440 | 7,180 | 57,920 | 11,510 | 17,180 |

### Table 19D.—Life sciences and miscellaneous fields

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & management: Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 40,402 | 25,183 | 10,550 | 4,669 | 133,428 | 18,460 | 67,737 | 35,901 | 11,330 |
| 1969-70 | 43,663 | 26,660 | 11,876 | 5,127 | 151,079 | 19,343 | 77,472 | 40,969 | 13,295 |
| 1970-71 | 43,257 | 25,333 | 12,136 | 5,788 | 163,875 | 20,036 | 85,024 | 45,089 | 13,726 |
| 1971-72 | 46,107 | 26,323 | 12,779 | 7,005 | 175,337 | 22,307 | 88,110 | 49,531 | 15,389 |
| 1972-73 | 51,051 | 29,636 | 13,661 | 7,754 | 182,222 | 24,710 | 88,735 | 51,433 | 17,344 |
| 1973-74 | 57,317 | 33,245 | 14,684 | 9,388 | 184,413 | 25,313 | 90,175 | 49,141 | 19,834 |
| 1974-75 | 60,603 | 34,612 | 15,061 | 10,930 | 177,956 | 25,601 | 86,557 | 44,547 | 21,251 |
| 1975-76 | 62,821 | 35,520 | 15,845 | 11,456 | 181,504 | 28,161 | 87,064 | 42,046 | 24,233 |
| 1976-77 | 62,855 | 34,218 | 16,690 | 11,947 | 181,001 | 29,241 | 87,264 | 39,918 | 24,578 |
| 1977-78 | 60,367 | 31,705 | 17,069 | 11,593 | 180,205 | 28,345 | 89,166 | 37,463 | 25,231 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 61,890 | 32,450 | 17,530 | 11,910 | 180,420 | 30,270 | 89,610 | 34,820 | 25,720 |
| 1979-80 | 63,810 | 33,390 | 18,250 | 12,170 | 181,980 | 31,900 | 90,240 | 32,950 | 26,890 |
| 1980-81 | 65,630 | 34,260 | 18,950 | 12,420 | 183,000 | 33,110 | 90,850 | 31,000 | 28,040 |
| 1981-82 | 66,760 | 34,610 | 19,480 | 12,670 | 182,200 | 33,340 | 91,550 | 28,550 | 28,760 |
| 1982-83 | 67,480 | 34,670 | 19,870 | 12,940 | 180,390 | 33,010 | 92,270 | 25,890 | 29,220 |
| 1983-84 | 67,520 | 34,280 | 20,050 | 13,190 | 179,330 | 32,250 | 92,530 | 25,250 | 29,300 |
| 1984-85 | 67,220 | 33,650 | 20,120 | 13,450 | 177,500 | 31,300 | 92,580 | 24,460 | 29,160 |
| 1985-86 | 66,560 | 32,750 | 20,110 | 13,700 | 175,610 | 30,120 | 93,360 | 23,350 | 28,780 |
| 1986-87 | 65,900 | 31,910 | 20,040 | 13,950 | 172,190 | 29,050 | 92,310 | 22,370 | 28,460 |
| 1987-88 | 65,740 | 31,390 | 20,140 | 14,210 | 170,490 | 28,270 | 92,230 | 21,610 | 28,380 |
| 1988-89 | 65,860 | 31,070 | 20,320 | 14,470 | 169,780 | 27,700 | 92,150 | 21,430 | 28,500 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: (1) U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (a) *Earned Degrees Conferred by Institutions of Higher Education*, (b) *A Taxonomy of Instructional Programs in Higher Education*; (2) Engineering Manpower Commission, Engineers Joint Council publication: *Engineering and Technology Enrollments Fall 1978*; and (3) American Institute of Certified Public Accountants publication: *The Supply of Accounting Graduates and the Demand for Public Accounting Recruits*, Spring 1979.

## Table 20.—Earned bachelor's degrees conferred on women, with projections, by field of study: United States, 1968-69 to 1988-89

### Table 20A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 66,502 | 50,235 | 12,581 | 2,750 | 936 |
| 1969-70 | 73,369 | 54,694 | 14,540 | 3,167 | 968 |
| 1970-71 | 80,779 | 58,499 | 16,851 | 4,497 | 932 |
| 1971-72 | 85,572 | 58,716 | 19,934 | 5,999 | 923 |
| 1972-73 | 90,175 | 58,061 | 22,719 | 8,323 | 1,072 |
| 1973-74 | 94,187 | 56,671 | 26,116 | 10,322 | 1,078 |
| 1974-75 | 92,712 | 52,259 | 26,798 | 12,656 | 989 |
| 1975-76 | 91,910 | 49,629 | 27,076 | 14,420 | 785 |
| 1976-77 | 91,557 | 47,787 | 26,820 | 16,240 | 710 |
| 1977-78 | 92,788 | 47,578 | 26,211 | 18,386 | 613 |
| | | | Projected[1] | | |
| 1978-79 | 93,370 | 46,770 | 26,630 | 19,380 | 590 |
| 1979-80 | 94,730 | 46,150 | 26,940 | 21,100 | 540 |
| 1980-81 | 94,360 | 44,190 | 26,510 | 23,190 | 470 |
| 1981-82 | 95,770 | 44,160 | 27,180 | 24,010 | 420 |
| 1982-83 | 93,250 | 41,890 | 26,480 | 24,480 | 400 |
| 1983-84 | 89,970 | 39,470 | 25,610 | 24,500 | 390 |
| 1984-85 | 85,930 | 36,860 | 24,560 | 24,140 | 370 |
| 1985-86 | 85,880 | 36,010 | 24,620 | 24,880 | 370 |
| 1986-87 | 82,230 | 33,760 | 23,700 | 24,410 | 360 |
| 1987-88 | 81,460 | 32,610 | 23,520 | 24,980 | 350 |
| 1988-89 | 80,930 | 31,570 | 23,420 | 25,590 | 350 |

### Table 20B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 78,664 | 150 | 18,655 | 15,715 | 2,194 | 41,950 |
| 1969-70 | 81,403 | 217 | 20,554 | 15,364 | 2,426 | 42,842 |
| 1970-71 | 82,061 | 664 | 18,138 | 14,870 | 3,813 | 44,576 |
| 1971-72 | 83,459 | 773 | 20,251 | 14,101 | 4,376 | 43,958 |
| 1972-73 | 83,996 | 920 | 21,750 | 14,356 | 5,243 | 41,727 |
| 1973-74 | 83,560 | 1,157 | 23,909 | 14,311 | 6,560 | 37,623 |
| 1974-75 | 80,867 | 1,435 | 25,250 | 13,485 | 7,793 | 32,904 |
| 1975-76 | 77,128 | 1,750 | 25,647 | 11,807 | 8,824 | 29,100 |
| 1976-77 | 75,062 | 1,973 | 25,627 | 10,573 | 10,282 | 26,607 |
| 1977-78 | 74,460 | 2,196 | 25,379 | 9,656 | 11,920 | 25,309 |
| | | | Projected[1] | | | |
| 1978-79 | 71,750 | 2,200 | 24,640 | 8,620 | 12,860 | 23,430 |
| 1979-80 | 71,410 | 2,250 | 25,410 | 7,750 | 14,160 | 21,840 |
| 1980-81 | 69,010 | 2,390 | 25,370 | 6,590 | 15,070 | 19,590 |
| 1981-82 | 69,670 | 2,540 | 26,460 | 6,700 | 15,710 | 18,260 |
| 1982-83 | 68,700 | 2,690 | 26,170 | 5,700 | 16,300 | 17,840 |
| 1983-84 | 68,360 | 2,840 | 25,700 | 5,770 | 16,710 | 17,340 |
| 1984-85 | 67,460 | 2,980 | 25,030 | 5,820 | 16,900 | 16,730 |
| 1985-86 | 69,390 | 2,980 | 25,510 | 6,110 | 17,870 | 16,920 |
| 1986-87 | 68,670 | 3,100 | 24,940 | 6,200 | 18,020 | 16,410 |
| 1987-88 | 69,840 | 3,110 | 25,120 | 6,420 | 18,780 | 16,410 |
| 1988-89 | 70,600 | 3,150 | 25,340 | 6,750 | 19,410 | 15,950 |

See footnotes at end of table.

## Table 20.—Earned bachelor's degrees conferred on women, with projections, by field of study: United States, 1968-69 to 1988-89—Cont.

### Table 20C.—Engineering, mathematics, and physical sciences

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Engineering technologies | Physical sciences |
|---|---|---|---|---|---|---|
| 1968-69 | 13,539 | 10,169 | 121 | 309 | 20 | 2,920 |
| 1969-70 | 13,763 | 10,265 | 199 | 330 | 52 | 2,917 |
| 1970-71 | 13,109 | 9,432 | 324 | 358 | 42 | 2,953 |
| 1971-72 | 13,328 | 9,259 | 461 | 480 | 46 | 3,082 |
| 1972-73 | 13,594 | 9,271 | 640 | 561 | 52 | 3,070 |
| 1973-74 | 13,924 | 8,844 | 780 | 691 | 105 | 3,504 |
| 1974-75 | 13,348 | 7,595 | 953 | 822 | 192 | 3,786 |
| 1975-76 | 13,199 | 6,509 | 1,118 | 1,295 | 165 | 4,112 |
| 1976-77 | 14,143 | 5,893 | 1,531 | 2,022 | 196 | 4,501 |
| 1977-78 | 15,628 | 5,171 | 1,852 | 3,464 | 245 | 4,896 |
| | | | Projected[1] | | | |
| 1978-79 | 16,260 | 4,450 | 2,100 | 4,230 | 260 | 5,220 |
| 1979-80 | 17,340 | 3,880 | 2,140 | 5,470 | 290 | 5,560 |
| 1980-81 | 17,710 | 3,120 | 2,220 | 6,210 | 320 | 5,840 |
| 1981-82 | 19,810 | 3,080 | 2,410 | 7,610 | 350 | 6,360 |
| 1982-83 | 19,900 | 3,120 | 2,450 | 7,390 | 360 | 6,580 |
| 1983-84 | 19,870 | 3,160 | 2,460 | 7,130 | 380 | 6,740 |
| 1984-85 | 19,650 | 3,190 | 2,640 | 6,810 | 390 | 6,620 |
| 1985-86 | 20,350 | 3,390 | 2,740 | 6,810 | 420 | 6,990 |
| 1986-87 | 20,200 | 3,460 | 2,810 | 6,530 | 420 | 6,980 |
| 1987-88 | 20,590 | 3,620 | 2,910 | 6,460 | 430 | 7,170 |
| 1988-89 | 21,110 | 3,740 | 2,930 | 6,420 | 460 | 7,560 |

### Table 20D.—Life sciences and miscellaneous fields

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & management: Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 25,782 | 9,806 | 415 | 15,561 | 133,799 | 1,572 | 6,764 | 112,653 | 12,810 |
| 1969-70 | 27,931 | 10,371 | 506 | 17,054 | 144,810 | 1,840 | 7,399 | 120,935 | 14,636 |
| 1970-71 | 30,384 | 10,410 | 536 | 19,438 | 157,803 | 2,063 | 8,404 | 131,482 | 15,854 |
| 1971-72 | 33,313 | 10,970 | 737 | 21,606 | 171,011 | 2,494 | 9,098 | 141,641 | 17,778 |
| 1972-73 | 39,502 | 12,597 | 1,095 | 25,810 | 176,904 | 3,237 | 10,148 | 142,777 | 20,742 |
| 1973-74 | 48,735 | 15,095 | 1,569 | 32,071 | 178,057 | 4,028 | 12,918 | 136,040 | 25,071 |
| 1974-75 | 57,756 | 17,129 | 2,467 | 38,160 | 173,409 | 5,515 | 16,149 | 122,422 | 29,323 |
| 1975-76 | 64,814 | 18,755 | 3,557 | 42,502 | 173,770 | 7,645 | 20,566 | 112,712 | 32,847 |
| 1976-77 | 69,545 | 19,387 | 4,777 | 45,381 | 173,697 | 9,942 | 25,641 | 103,740 | 34,374 |
| 1977-78 | 73,219 | 19,797 | 5,581 | 47,841 | 177,762 | 11,800 | 31,960 | 98,616 | 35,386 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 74,350 | 20,620 | 5,680 | 48,050 | 182,870 | 13,150 | 33,950 | 98,800 | 36,970 |
| 1979-80 | 78,270 | 21,410 | 6,330 | 50,530 | 187,350 | 14,570 | 37,750 | 96,180 | 38,850 |
| 1980-81 | 82,700 | 21,630 | 6,790 | 54,280 | 185,720 | 15,380 | 40,320 | 90,470 | 39,550 |
| 1981-82 | 85,370 | 22,870 | 6,950 | 55,550 | 190,880 | 16,730 | 43,550 | 88,590 | 42,010 |
| 1982-83 | 86,260 | 22,900 | 7,210 | 56,150 | 186,390 | 17,110 | 44,740 | 82,240 | 42,300 |
| 1983-84 | 86,400 | 22,800 | 7,500 | 56,100 | 181,000 | 16,630 | 46,400 | 75,690 | 42,280 |
| 1984-85 | 85,600 | 22,490 | 7,680 | 55,430 | 174,260 | 16,050 | 47,420 | 68,930 | 41,860 |
| 1985-86 | 88,240 | 23,230 | 7,810 | 57,200 | 175,840 | 16,240 | 50,800 | 65,490 | 43,310 |
| 1986-87 | 87,450 | 23,000 | 7,960 | 56,490 | 170,050 | 15,760 | 51,730 | 59,580 | 42,980 |
| 1987-88 | 89,090 | 23,480 | 7,930 | 57,680 | 169,820 | 15,770 | 54,450 | 55,660 | 43,940 |
| 1988-89 | 91,190 | 23,960 | 8,230 | 59,000 | 169,570 | 15,820 | 56,670 | 52,100 | 44,980 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 21.—Earned master's degrees, with projections, by field of study: United States, 1968-69 to 1988-89

### Table 21A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 32,169 | 16,514 | 3,736 | 5,987 | 5,932 |
| 1969-70 | 33,878 | 16,659 | 3,953 | 6,755 | 6,511 |
| 1970-71 | 37,200 | 17,508 | 4,473 | 8,260 | 7,001 |
| 1971-72 | 40,454 | 18,417 | 5,289 | 9,365 | 7,383 |
| 1972-73 | 42,858 | 18,341 | 5,831 | 10,990 | 7,696 |
| 1973-74 | 45,591 | 18,409 | 6,588 | 12,460 | 8,134 |
| 1974-75 | 48,514 | 18,058 | 7,066 | 15,299 | 8,091 |
| 1975-76 | 49,773 | 16,819 | 7,811 | 17,106 | 8,037 |
| 1976-77 | 51,774 | 16,447 | 8,301 | 19,454 | 7,572 |
| 1977-78 | 50,586 | 15,559 | 8,160 | 19,953 | 6,914 |
| | | | Projected[1] | | |
| 1978-79 | 49,790 | 15,420 | 8,470 | 19,510 | 6,390 |
| 1979-80 | 49,890 | 14,980 | 8,680 | 20,140 | 6,090 |
| 1980-81 | 51,180 | 14,450 | 8,850 | 20,960 | 6,920 |
| 1981-82 | 50,870 | 14,080 | 9,080 | 21,990 | 5,720 |
| 1982-83 | 51,540 | 13,670 | 9,290 | 23,020 | 5,560 |
| 1983-84 | 51,860 | 13,200 | 9,460 | 23,950 | 5,250 |
| 1984-85 | 52,830 | 12,830 | 9,690 | 25,060 | 5,250 |
| 1985-86 | 53,270 | 12,320 | 9,830 | 25,910 | 5,210 |
| 1986-87 | 53,660 | 11,820 | 9,940 | 26,710 | 5,190 |
| 1987-88 | 52,810 | 11,100 | 9,900 | 26,870 | 4,940 |
| 1988-89 | 52,780 | 10,500 | 9,930 | 27,480 | 4,870 |

### Table 21B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 25,256 | 1,143 | 7,413 | 4,691 | 785 | 11,224 |
| 1969-70 | 26,305 | 1,427 | 7,849 | 4,803 | 862 | 11,364 |
| 1970-71 | 27,701 | 1,705 | 6,675 | 4,755 | 1,856 | 12,710 |
| 1971-72 | 28,975 | 1,899 | 7,537 | 4,616 | 2,200 | 12,723 |
| 1972-73 | 28,605 | 2,307 | 7,254 | 4,289 | 2,406 | 12,349 |
| 1973-74 | 29,133 | 2,702 | 8,001 | 3,964 | 2,640 | 12,126 |
| 1974-75 | 29,762 | 2,938 | 8,362 | 3,807 | 2,794 | 11,861 |
| 1975-76 | 29,982 | 3,215 | 8,817 | 3,531 | 3,126 | 11,293 |
| 1976-77 | 28,538 | 3,213 | 8,636 | 3,147 | 3,091 | 10,451 |
| 1977-78 | 28,184 | 3,115 | 9,036 | 2,726 | 3,296 | 10,011 |
| | | | Projected[1] | | | |
| 1978-79 | 28,400 | 3,080 | 9,450 | 2,600 | 3,470 | 9,800 |
| 1979-80 | 28,170 | 3,050 | 9,650 | 2,390 | 3,580 | 9,500 |
| 1980-81 | 27,910 | 2,990 | 9,880 | 2,130 | 3,700 | 9,210 |
| 1981-82 | 27,580 | 2,960 | 9,900 | 1,980 | 3,780 | 8,960 |
| 1982-83 | 27,580 | 2,940 | 9,940 | 1,980 | 3,780 | 8,940 |
| 1983-84 | 27,400 | 3,010 | 9,930 | 1,960 | 3,730 | 8,770 |
| 1984-85 | 27,330 | 3,030 | 9,980 | 1,960 | 3,700 | 8,660 |
| 1985-86 | 27,060 | 3,000 | 9,950 | 1,940 | 3,660 | 8,510 |
| 1986-87 | 26,830 | 2,980 | 9,940 | 1,930 | 3,630 | 8,350 |
| 1987-88 | 25,870 | 2,900 | 9,670 | 1,850 | 3,480 | 7,970 |
| 1988-89 | 25,300 | 2,830 | 9,540 | 1,820 | 3,400 | 7,710 |

See footnotes at end of table

## Table 21.—Earned master's degrees, with projections, by field of study: United States, 1968-69 to 1988-89—Cont.

### Table 21C.—Engineering, mathematics, and physical sciences

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| 1968-69 | 27,992 | 5,713 | 1,012 | 15,372 | 5,895 |
| 1969-70 | 28,753 | 5,636 | 1,459 | 15,723 | 5,935 |
| 1970-71 | 29,589 | 5,191 | 1,588 | 16,443 | 6,367 |
| 1971-72 | 30,422 | 5,198 | 1,977 | 16,960 | 6,287 |
| 1972-73 | 30,017 | 5,028 | 2,113 | 16,619 | 6,257 |
| 1973-74 | 28,551 | 4,834 | 2,276 | 15,379 | 6,062 |
| 1974-75 | 27,781 | 4,327 | 2,299 | 15,348 | 5,807 |
| 1975-76 | 28,268 | 3,857 | 2,603 | 16,342 | 5,466 |
| 1976-77 | 28,089 | 3,095 | 2,798 | 16,245 | 5,331 |
| 1977-78 | 28,370 | 3,373 | 3,038 | 16,398 | 5,561 |
| | | | Projected[1] | | |
| 1978-79 | 28,520 | 3,100 | 3,220 | 16,470 | 5,730 |
| 1979-80 | 28,660 | 2,850 | 3,420 | 16,610 | 5,780 |
| 1980-81 | 28,240 | 2,540 | 3,580 | 16,380 | 5,740 |
| 1981-82 | 28,550 | 2,350 | 3,840 | 16,340 | 5,820 |
| 1982-83 | 28,920 | 2,550 | 4,050 | 16,440 | 5,880 |
| 1983-84 | 28,940 | 2,550 | 4,180 | 16,310 | 5,900 |
| 1984-85 | 29,200 | 2,560 | 4,340 | 16,310 | 5,990 |
| 1985-86 | 29,040 | 2,540 | 4,320 | 16,200 | 5,980 |
| 1986-87 | 28,990 | 2,530 | 4,280 | 16,200 | 5,980 |
| 1987-88 | 28,620 | 2,460 | 4,200 | 16,060 | 5,900 |
| 1988-89 | 28,340 | 2,420 | 4,140 | 15,930 | 5,850 |

### Table 21D.—Life sciences and miscellaneous fields

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 12,384 | 5,743 | 2,496 | 4,065 | 96,035 | 1,333 | 18,279 | 70,231 | 6,192 |
| 1969-70 | 12,485 | 5,880 | 2,197 | 4,408 | 106,870 | 1,643 | 20,516 | 78,275 | 6,996 |
| 1970-71 | 13,934 | 5,728 | 2,457 | 5,749 | 122,085 | 1,097 | 25,447 | 88,716 | 6,825 |
| 1971-72 | 15,988 | 6,101 | 2,680 | 7,207 | 135,794 | 1,377 | 29,056 | 97,880 | 7,481 |
| 1972-73 | 17,432 | 6,263 | 2,807 | 8,362 | 144,459 | 1,621 | 29,545 | 105,242 | 8,051 |
| 1973-74 | 19,079 | 6,552 | 2,928 | 9,599 | 154,379 | 1,798 | 30,955 | 112,252 | 9,374 |
| 1974-75 | 20,309 | 6,550 | 3,067 | 10,692 | 166,084 | 2,227 | 34,137 | 119,778 | 9,942 |
| 1975-76 | 22,478 | 6,582 | 3,340 | 12,556 | 181,270 | 2,730 | 39,890 | 127,948 | 10,702 |
| 1976-77 | 23,789 | 7,114 | 3,724 | 12,951 | 184,994 | 3,278 | 43,267 | 126,375 | 12,074 |
| 1977-78 | 25,154 | 6,806 | 4,023 | 14,325 | 179,326 | 3,354 | 45,130 | 118,582 | 12,260 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 25,810 | 6,840 | 4,060 | 14,910 | 181,730 | 3,380 | 46,560 | 119,000 | 12,790 |
| 1979-80 | 25,400 | 6,250 | 4,240 | 14,910 | 182,970 | 3,450 | 49,620 | 117,020 | 12,880 |
| 1980-81 | 26,870 | 6,880 | 4,370 | 15,620 | 181,650 | 3,760 | 50,680 | 113,910 | 13,300 |
| 1981-82 | 27,800 | 7,020 | 4,570 | 16,210 | 181,130 | 4,060 | 51,390 | 111,870 | 13,810 |
| 1982-83 | 28,730 | 7,120 | 4,760 | 16,850 | 179,530 | 4,310 | 52,090 | 108,820 | 14,310 |
| 1983-84 | 29,370 | 7,160 | 4,850 | 17,360 | 175,670 | 4,330 | 51,570 | 105,030 | 14,740 |
| 1984-85 | 30,280 | 7,170 | 4,990 | 18,040 | 173,680 | 4,330 | 51,940 | 102,120 | 15,290 |
| 1985-86 | 30,750 | 7,090 | 5,050 | 18,610 | 171,820 | 4,240 | 51,550 | 100,350 | 15,680 |
| 1986-87 | 31,260 | 6,990 | 5,100 | 19,170 | 169,730 | 4,130 | 51,130 | 98,390 | 16,080 |
| 1987-88 | 30,950 | 6,760 | 5,100 | 19,090 | 162,790 | 3,940 | 49,640 | 93,110 | 16,100 |
| 1988-89 | 31,020 | 6,570 | 5,120 | 19,330 | 157,970 | 3,790 | 48,410 | 89,460 | 16,310 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 22.—Earned master's degrees conferred on men, with projections, by field of study: United States 1968-69 to 1988-89

### Table 22A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 18,873 | 12,229 | 2,582 | 2,926 | 1,136 |
| 1969-70 | 18,631 | 11,865 | 2,479 | 3,183 | 1,104 |
| 1970-71 | 20,784 | 12,416 | 2,783 | 4,274 | 1,311 |
| 1971-72 | 22,855 | 13,107 | 3,259 | 5,005 | 1,484 |
| 1972-73 | 24,247 | 13,193 | 3,495 | 5,883 | 1,676 |
| 1973-74 | 25,635 | 12,998 | 3,971 | 6,863 | 1,803 |
| 1974-75 | 26,768 | 12,489 | 4,044 | 8,516 | 1,719 |
| 1975-76 | 26,694 | 11,374 | 4,171 | 9,408 | 1,741 |
| 1976-77 | 27,416 | 10,894 | 4,313 | 10,663 | 1,546 |
| 1977-78 | 26,015 | 10,267 | 3,919 | 10,445 | 1,384 |
| | | | Projected[1] | | |
| 1978-79 | 24,730 | 9,910 | 4,010 | 9,610 | 1,200 |
| 1979-80 | 24,730 | 9,550 | 4,050 | 10,080 | 1,050 |
| 1980-81 | 24,410 | 9,040 | 4,040 | 10,290 | 1,040 |
| 1981-82 | 24,890 | 8,800 | 4,100 | 10,940 | 1,050 |
| 1982-83 | 25,170 | 8,480 | 4,130 | 11,500 | 1,060 |
| 1983-84 | 25,390 | 8,140 | 4,130 | 12,060 | 1,060 |
| 1984-85 | 25,820 | 7,850 | 4,190 | 12,710 | 1,070 |
| 1985-86 | 25,770 | 7,420 | 4,180 | 13,110 | 1,060 |
| 1986-87 | 25,760 | 7,010 | 4,210 | 13,480 | 1,060 |
| 1987-88 | 25,470 | 6,560 | 4,100 | 13,770 | 1,040 |
| 1988-89 | 25,280 | 6,120 | 3,920 | 14,210 | 1,030 |

### Table 22B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 12,506 | 1,022 | 4,093 | 1,936 | 553 | 4,902 |
| 1969-70 | 12,404 | 1,260 | 4,158 | 1,755 | 561 | 4,670 |
| 1970-71 | 13,242 | 1,469 | 3,510 | 1,642 | 1,214 | 5,407 |
| 1971-72 | 14,117 | 1,626 | 4,049 | 1,616 | 1,443 | 5,383 |
| 1972-73 | 14,331 | 1,943 | 4,005 | 1,536 | 1,546 | 5,301 |
| 1973-74 | 14,825 | 2,208 | 4,325 | 1,344 | 1,668 | 5,280 |
| 1974-75 | 14,559 | 2,343 | 4,448 | 1,258 | 1,618 | 4,892 |
| 1975-76 | 14,760 | 2,545 | 4,507 | 1,178 | 1,818 | 4,712 |
| 1976-77 | 13,621 | 2,489 | 4,211 | 965 | 1,719 | 4,237 |
| 1977-78 | 12,929 | 2,304 | 4,327 | 795 | 1,673 | 3,830 |
| | | | Projected[1] | | | |
| 1978-79 | 12,600 | 2,210 | 4,300 | 700 | 1,690 | 3,700 |
| 1979-80 | 12,240 | 2,110 | 4,350 | 580 | 1,700 | 3,500 |
| 1980-81 | 11,680 | 1,980 | 4,310 | 450 | 1,710 | 3,230 |
| 1981-82 | 11,560 | 1,900 | 4,410 | 460 | 1,730 | 3,060 |
| 1982-83 | 11,570 | 1,810 | 4,480 | 460 | 1,740 | 3,080 |
| 1983-84 | 11,640 | 1,830 | 4,540 | 460 | 1,720 | 3,090 |
| 1984-85 | 11,770 | 1,850 | 4,620 | 470 | 1,710 | 3,120 |
| 1985-86 | 11,690 | 1,830 | 4,620 | 460 | 1,680 | 3,100 |
| 1986-87 | 11,660 | 1,820 | 4,640 | 460 | 1,660 | 3,080 |
| 1987-88 | 11,530 | 1,800 | 4,620 | 450 | 1,620 | 3,040 |
| 1988-89 | 11,420 | 1,760 | 4,610 | 450 | 1,600 | 3,000 |

See footnotes at end of table.

## Table 22.—Earned master's degrees conferred on men, with projections, by field of study: United States 1968-69 to 1988-89—Cont.

### Table 22C.—Engineering, mathematics, and physical sciences

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| 1968-69 | 25,652 | 4,222 | 939 | 15,259 | 5,232 |
| 1969-70 | 25,930 | 3,966 | 1,324 | 15,547 | 5,093 |
| 1970-71 | 26,876 | 3,673 | 1,424 | 16,258 | 5,521 |
| 1971-72 | 27,499 | 3,655 | 1,752 | 16,688 | 5,404 |
| 1972-73 | 27,168 | 3,525 | 1,888 | 16,341 | 5,414 |
| 1973-74 | 25,529 | 3,337 | 1,983 | 15,023 | 5,186 |
| 1974-75 | 24,808 | 2,905 | 1,961 | 14,973 | 4,969 |
| 1975-76 | 25,181 | 2,547 | 2,226 | 15,760 | 4,648 |
| 1976-77 | 24,703 | 2,396 | 2,332 | 15,525 | 4,450 |
| 1977-78 | 24,852 | 2,228 | 2,471 | 15,533 | 4,620 |
| | | | Projected[1] | | |
| 1978-79 | 24,810 | 1,990 | 2,550 | 15,540 | 4,730 |
| 1979-80 | 24,780 | 1,820 | 2,680 | 15,530 | 4,750 |
| 1980-81 | 24,240 | 1,600 | 2,760 | 15,200 | 4,680 |
| 1981-82 | 24,510 | 1,620 | 2,940 | 15,200 | 4,750 |
| 1982-83 | 24,800 | 1,630 | 3,090 | 15,300 | 4,780 |
| 1983-84 | 24,870 | 1,640 | 3,230 | 15,200 | 4,800 |
| 1984-85 | 25,120 | 1,660 | 3,400 | 15,200 | 4,860 |
| 1985-86 | 24,950 | 1,640 | 3,380 | 15,100 | 4,830 |
| 1986-87 | 24,890 | 1,630 | 3,350 | 15,100 | 4,810 |
| 1987-88 | 24,640 | 1,610 | 3,310 | 14,960 | 4,760 |
| 1988-89 | 24,400 | 1,590 | 3,270 | 14,830 | 4,710 |

### Table 22D.—Life sciences and miscellaneous fields

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 8,470 | 4,087 | 2,384 | 1,999 | 56,030 | 1,254 | 17,681 | 33,132 | 3,963 |
| 1969-70 | 8,187 | 3,975 | 2,059 | 2,153 | 60,472 | 1,004 | 19,826 | 35,251 | 4,391 |
| 1970-71 | 8,685 | 3,805 | 2,313 | 2,567 | 68,559 | 994 | 24,512 | 38,899 | 4,154 |
| 1971-72 | 9,718 | 4,087 | 2,490 | 3,141 | 75,361 | 1,269 | 27,963 | 41,728 | 4,401 |
| 1972-73 | 10,509 | 4,354 | 2,588 | 3,567 | 78,213 | 1,480 | 28,158 | 44,022 | 4,553 |
| 1973-74 | 11,014 | 4,555 | 2,640 | 3,819 | 80,839 | 1,610 | 28,990 | 45,004 | 5,235 |
| 1974-75 | 11,382 | 4,587 | 2,703 | 4,092 | 84,053 | 1,948 | 31,353 | 45,309 | 5,443 |
| 1975-76 | 11,576 | 4,497 | 2,862 | 4,217 | 89,037 | 2,252 | 35,410 | 45,659 | 5,716 |
| 1976-77 | 12,058 | 4,718 | 3,177 | 4,163 | 89,985 | 2,642 | 37,239 | 43,174 | 6,930 |
| 1977-78 | 11,933 | 4,400 | 3,268 | 4,265 | 85,483 | 2,633 | 37,668 | 38,281 | 6,901 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 11,630 | 4,220 | 3,130 | 4,280 | 85,000 | 2,500 | 38,230 | 37,300 | 6,970 |
| 1979-80 | 11,080 | 3,550 | 3,230 | 4,300 | 82,300 | 2,460 | 38,000 | 35,000 | 6,840 |
| 1980-81 | 11,640 | 4,060 | 3,280 | 4,300 | 80,740 | 2,650 | 38,600 | 32,500 | 6,990 |
| 1981-82 | 11,980 | 4,140 | 3,420 | 4,420 | 80,950 | 2,860 | 39,510 | 31,230 | 7,350 |
| 1982-83 | 12,200 | 4,160 | 3,530 | 4,510 | 80,510 | 3,000 | 40,220 | 29,630 | 7,660 |
| 1983-84 | 12,360 | 4,140 | 3,640 | 4,580 | 78,620 | 3,040 | 40,030 | 27,600 | 7,950 |
| 1984-85 | 12,640 | 4,160 | 3,780 | 4,700 | 77,430 | 3,040 | 40,450 | 25,640 | 8,300 |
| 1985-86 | 12,670 | 4,100 | 3,840 | 4,730 | 76,670 | 2,960 | 40,160 | 25,050 | 8,500 |
| 1986-87 | 12,700 | 4,020 | 3,910 | 4,770 | 75,880 | 2,860 | 39,890 | 24,410 | 8,720 |
| 1987-88 | 12,660 | 3,920 | 3,960 | 4,780 | 74,240 | 2,730 | 39,090 | 23,550 | 8,870 |
| 1988-89 | 12,600 | 3,800 | 4,010 | 4,790 | 72,540 | 2,600 | 38,230 | 22,680 | 9,030 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 23.—Earned master's degrees conferred on women, with projections, by field of study: United States 1968-69 to 1988-89

### Table 23A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 13,296 | 4,285 | 1,154 | 3,061 | 4,796 |
| 1969-70 | 15,247 | 4,794 | 1,474 | 3,572 | 5,407 |
| 1970-71 | 16,416 | 5,092 | 1,648 | 3,986 | 5,690 |
| 1971-72 | 17,599 | 5,310 | 2,030 | 4,360 | 5,899 |
| 1972-73 | 18,611 | 5,148 | 2,336 | 5,107 | 6,020 |
| 1973-74 | 19,956 | 5,411 | 2,617 | 5,597 | 6,331 |
| 1974-75 | 21,746 | 5,569 | 3,022 | 6,783 | 6,372 |
| 1975-76 | 23,079 | 5,445 | 3,640 | 7,698 | 6,296 |
| 1976-77 | 24,358 | 5,553 | 3,988 | 8,791 | 6,026 |
| 1977-78 | 24,571 | 5,292 | 4,241 | 9,508 | 5,530 |
| | | | Projected[1] | | |
| 1978-79 | 25,060 | 5,510 | 4,460 | 9,900 | 5,190 |
| 1979-80 | 25,160 | 5,430 | 4,630 | 10,060 | 5,040 |
| 1980-81 | 26,770 | 5,410 | 4,810 | 10,670 | 5,880 |
| 1981-82 | 25,980 | 5,280 | 4,980 | 11,050 | 4,670 |
| 1982-83 | 26,370 | 5,190 | 5,160 | 11,520 | 4,500 |
| 1983-84 | 26,470 | 5,060 | 5,330 | 11,890 | 4,190 |
| 1984-85 | 27,010 | 4,980 | 5,500 | 12,350 | 4,180 |
| 1985-86 | 27,500 | 4,900 | 5,650 | 12,800 | 4,150 |
| 1986-87 | 27,900 | 4,810 | 5,730 | 13,230 | 4,130 |
| 1987-88 | 27,340 | 4,540 | 5,800 | 13,100 | 3,900 |
| 1988-89 | 27,500 | 4,380 | 6,010 | 13,270 | 3,840 |

### Table 23B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 12,750 | 121 | 3,320 | 2,755 | 232 | 6,322 |
| 1969-70 | 13,901 | 167 | 3,691 | 3,048 | 301 | 6,694 |
| 1970-71 | 14,459 | 236 | 3,165 | 3,113 | 642 | 7,303 |
| 1971-72 | 14,858 | 273 | 3,488 | 3,000 | 757 | 7,340 |
| 1972-73 | 14,274 | 364 | 3,249 | 2,753 | 860 | 7,048 |
| 1973-74 | 14,608 | 494 | 3,676 | 2,620 | 972 | 6,846 |
| 1974-75 | 15,203 | 595 | 3,914 | 2,549 | 1,176 | 6,969 |
| 1975-76 | 15,222 | 670 | 4,310 | 2,353 | 1,308 | 6,581 |
| 1976-77 | 14,917 | 724 | 4,425 | 2,182 | 1,372 | 6,214 |
| 1977-78 | 15,255 | 811 | 4,709 | 1,931 | 1,623 | 6,181 |
| | | | Projected[1] | | | |
| 1978-79 | 15,800 | 870 | 5,150 | 1,900 | 1,780 | 6,100 |
| 1979-80 | 15,930 | 940 | 5,300 | 1,810 | 1,880 | 6,000 |
| 1980-81 | 16,230 | 1,010 | 5,570 | 1,680 | 1,990 | 5,980 |
| 1981-82 | 16,020 | 1,060 | 5,490 | 1,520 | 2,050 | 5,900 |
| 1982-83 | 16,010 | 1,130 | 5,460 | 1,520 | 2,040 | 5,860 |
| 1983-84 | 15,760 | 1,180 | 5,390 | 1,500 | 2,010 | 5,680 |
| 1984-85 | 15,560 | 1,180 | 5,360 | 1,490 | 1,990 | 5,540 |
| 1985-86 | 15,370 | 1,170 | 5,330 | 1,480 | 1,980 | 5,410 |
| 1986-87 | 15,170 | 1,160 | 5,300 | 1,470 | 1,970 | 5,270 |
| 1987-88 | 14,340 | 1,100 | 5,050 | 1,400 | 1,860 | 4,930 |
| 1988-89 | 13,880 | 1,070 | 4,930 | 1,370 | 1,800 | 4,710 |

See footnotes at end of table.

## Table 23.—Earned master's degrees conferred on women with projections, by field of study: United States, 1968-69 to 1988-89—Cont.

### Table 23C.—Engineering, mathematics, and physical sciences

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| 1968-69 | 2,340 | 1,491 | 73 | 113 | 663 |
| 1969-70 | 2,823 | 1,670 | 135 | 176 | 842 |
| 1970-71 | 2,713 | 1,518 | 164 | 185 | 846 |
| 1971-72 | 2,923 | 1,543 | 225 | 272 | 883 |
| 1972-73 | 2,849 | 1,503 | 225 | 278 | 843 |
| 1973-74 | 3,022 | 1,497 | 293 | 356 | 876 |
| 1974-75 | 2,973 | 1,422 | 338 | 375 | 838 |
| 1975-76 | 3,087 | 1,310 | 377 | 582 | 818 |
| 1976-77 | 3,366 | 1,299 | 466 | 720 | 881 |
| 1977-78 | 3,518 | 1,145 | 567 | 865 | 941 |
| | | | Projected[1] | | |
| 1978-79 | 3,710 | 1,110 | 670 | 930 | 1,000 |
| 1979-80 | 3,880 | 1,030 | 740 | 1,080 | 1,030 |
| 1980-81 | 4,000 | 940 | 820 | 1,180 | 1,060 |
| 1981-82 | 4,040 | 930 | 900 | 1,140 | 1,070 |
| 1982-83 | 4,120 | 920 | 960 | 1,140 | 1,100 |
| 1983-84 | 4,070 | 910 | 950 | 1,110 | 1,100 |
| 1984-85 | 4,080 | 900 | 940 | 1,110 | 1,130 |
| 1985-86 | 4,090 | 900 | 940 | 1,100 | 1,150 |
| 1986-87 | 4,100 | 900 | 930 | 1,100 | 1,170 |
| 1987-88 | 3,980 | 850 | 890 | 1,100 | 1,140 |
| 1988-89 | 3,940 | 830 | 870 | 1,100 | 1,140 |

### Table 23D.—Life sciences and miscellaneous fields

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 3,834 | 1,656 | 112 | 2,066 | 40,005 | 79 | 598 | 37,099 | 2,229 |
| 1969-70 | 4,298 | 1,825 | 138 | 2,335 | 46,398 | 79 | 690 | 43,024 | 2,605 |
| 1970-71 | 5,249 | 1,923 | 144 | 3,182 | 53,526 | 103 | 935 | 49,817 | 2,671 |
| 1971-72 | 6,270 | 2,014 | 190 | 4,066 | 60,433 | 108 | 1,093 | 56,152 | 3,080 |
| 1972-73 | 6,923 | 1,909 | 219 | 4,795 | 66,246 | 141 | 1,387 | 61,220 | 3,498 |
| 1973-74 | 8,065 | 1,997 | 288 | 5,780 | 73,540 | 188 | 1,965 | 67,248 | 4,139 |
| 1974-75 | 8,927 | 1,963 | 364 | 6,600 | 82,031 | 279 | 2,784 | 74,469 | 4,499 |
| 1975-76 | 10,902 | 2,085 | 478 | 8,339 | 92,233 | 478 | 4,480 | 82,289 | 4,986 |
| 1976-77 | 11,731 | 2,396 | 547 | 8,788 | 95,009 | 636 | 6,028 | 83,201 | 5,144 |
| 1977-78 | 13,221 | 2,406 | 755 | 10,060 | 93,843 | 721 | 7,462 | 80,301 | 5,359 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 14,180 | 2,620 | 930 | 10,630 | 96,730 | 880 | 8,330 | 81,700 | 5,820 |
| 1979-80 | 14,320 | 2,700 | 1,010 | 10,610 | 100,670 | 990 | 11,620 | 82,020 | 6,040 |
| 1980-81 | 15,230 | 2,820 | 1,090 | 11,320 | 100,910 | 1,110 | 12,080 | 81,410 | 6,310 |
| 1981-82 | 15,820 | 2,880 | 1,150 | 11,790 | 100,180 | 1,200 | 11,880 | 80,640 | 6,460 |
| 1982-83 | 16,530 | 2,960 | 1,230 | 12,340 | 99,020 | 1,310 | 11,870 | 79,190 | 6,650 |
| 1983-84 | 17,010 | 3,020 | 1,210 | 12,780 | 97,050 | 1,290 | 11,540 | 77,430 | 6,790 |
| 1984-85 | 17,560 | 3,010 | 1,210 | 13,340 | 96,250 | 1,290 | 11,490 | 76,480 | 6,990 |
| 1985-86 | 18,080 | 2,990 | 1,210 | 13,880 | 95,150 | 1,280 | 11,390 | 75,300 | 7,180 |
| 1986-87 | 18,560 | 2,970 | 1,190 | 14,400 | 93,850 | 1,270 | 11,240 | 73,980 | 7,360 |
| 1987-88 | 18,290 | 2,840 | 1,140 | 14,310 | 88,550 | 1,210 | 10,550 | 69,560 | 7,230 |
| 1988-89 | 18,420 | 2,770 | 1,110 | 14,540 | 85,430 | 1,190 | 10,180 | 66,780 | 7,280 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 24.—Earned doctor's degrees (except first-professional), with projections, by field of study: United States, 1968-69 to 1988-89

### Table 24A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 4,599 | 2,953 | 1,508 | 121 | 17 |
| 1969-70 | 5,383 | 3,592 | 1,620 | 131 | 40 |
| 1970-71 | 5,802 | 3,803 | 1,782 | 178 | 39 |
| 1971-72 | 6,389 | 4,233 | 1,881 | 211 | 64 |
| 1972-73 | 6,803 | 4,393 | 2,089 | 219 | 102 |
| 1973-74 | 6,914 | 4,288 | 2,336 | 230 | 60 |
| 1974-75 | 7,157 | 4,374 | 2,442 | 285 | 56 |
| 1975-76 | 7,313 | 4,342 | 2,581 | 319 | 71 |
| 1976-77 | 7,108 | 3,937 | 2,761 | 335 | 75 |
| 1977-78 | 6,777 | 3,728 | 2,587 | 395 | 67 |
| | | | Projected[1] | | |
| 1978-79 | 6,830 | 3,720 | 2,630 | 410 | 70 |
| 1979-80 | 6,970 | 3,780 | 2,670 | 450 | 70 |
| 1980-81 | 7,100 | 3,820 | 2,740 | 470 | 70 |
| 1981-82 | 7,076 | 3,750 | 2,740 | 510 | 70 |
| 1982-83 | 6,790 | 3,550 | 2,660 | 510 | 70 |
| 1983-84 | 6,600 | 3,390 | 2,610 | 530 | 70 |
| 1984-85 | 6,480 | 3,320 | 2,560 | 530 | 70 |
| 1985-86 | 6,370 | 3,250 | 2,510 | 540 | 70 |
| 1986-87 | 6,270 | 3,190 | 2,470 | 540 | 70 |
| 1987-88 | 6,150 | 3,130 | 2,410 | 540 | 70 |
| 1988-89 | 6,030 | 3,060 | 2,360 | 540 | 70 |

### Table 24B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 3,124 | 32 | 684 | 659 | 22 | 1,727 |
| 1969-70 | 3,476 | 35 | 734 | 760 | 17 | 1,930 |
| 1970-71 | 3,999 | 36 | 621 | 781 | 145 | 2,416 |
| 1971-72 | 4,163 | 50 | 572 | 841 | 111 | 2,589 |
| 1972-73 | 4,558 | 58 | 616 | 991 | 139 | 2,754 |
| 1973-74 | 4,385 | 69 | 585 | 923 | 175 | 2,633 |
| 1974-75 | 4,238 | 69 | 649 | 857 | 165 | 2,498 |
| 1975-76 | 4,217 | 82 | 620 | 864 | 204 | 2,447 |
| 1976-77 | 3,857 | 73 | 662 | 752 | 171 | 2,199 |
| 1977-78 | 3,690 | 73 | 708 | 649 | 191 | 2,069 |
| | | | Projected[1] | | | |
| 1978-79 | 3,670 | 80 | 710 | 640 | 200 | 2,040 |
| 1979-80 | 3,720 | 70 | 770 | 610 | 210 | 2,060 |
| 1980-81 | 3,580 | 70 | 780 | 560 | 210 | 1,960 |
| 1981-82 | 3,430 | 70 | 800 | 490 | 220 | 1,850 |
| 1982-83 | 3,270 | 70 | 800 | 470 | 220 | 1,710 |
| 1984-85 | 3,110 | 70 | 770 | 450 | 210 | 1,610 |
| 1985-86 | 3,050 | 70 | 760 | 440 | 210 | 1,570 |
| 1986-87 | 2,980 | 70 | 740 | 440 | 200 | 1,530 |
| 1987-88 | 2,910 | 70 | 730 | 420 | 200 | 1,490 |
| 1988-89 | 2,860 | 70 | 720 | 420 | 200 | 1,450 |

See footnotes at end of table.

## Table 24.—Earned doctor's degrees (except first-professional), with projections, by field of study: United States, 1968-69 to 1988-89—Cont.

### Table 24C.—Engineering, mathematics, and physical sciences

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| 1968-69 | 8,411 | 1,097 | 64 | 3,391 | 3,859 |
| 1969-70 | 9,346 | 1,236 | 107 | 3,691 | 4,312 |
| 1970-71 | 9,355 | 1,199 | 128 | 3,638 | 4,390 |
| 1971-72 | 9,069 | 1,128 | 167 | 3,671 | 4,103 |
| 1972-73 | 8,762 | 1,068 | 196 | 3,492 | 4,006 |
| 1973-74 | 8,167 | 1,031 | 198 | 3,312 | 3,626 |
| 1974-75 | 7,922 | 975 | 213 | 3,108 | 3,626 |
| 1975-76 | 7,352 | 856 | 244 | 2,821 | 3,431 |
| 1976-77 | 6,966 | 823 | 216 | 2,586 | 3,341 |
| 1977-78 | 6,574 | 805 | 196 | 2,440 | 3,133 |
| | | | Projected[1] | | |
| 1978-79 | 6,310 | 750 | 200 | 2,320 | 3,040 |
| 1979-80 | 6,340 | 760 | 200 | 2,290 | 3,090 |
| 1980-81 | 6,150 | 700 | 190 | 2,300 | 2,960 |
| 1981-82 | 6,010 | 650 | 180 | 2,330 | 2,850 |
| 1982-83 | 5,860 | 630 | 180 | 2,270 | 2,780 |
| 1983-84 | 5,760 | 620 | 180 | 2,230 | 2,730 |
| 1984-85 | 5,610 | 610 | 170 | 2,170 | 2,660 |
| 1985-86 | 5,510 | 600 | 170 | 2,130 | 2,610 |
| 1986-87 | 5,400 | 580 | 170 | 2,090 | 2,560 |
| 1987-88 | 5,290 | 570 | 160 | 2,050 | 2,510 |
| 1988-89 | 5,160 | 550 | 160 | 2,000 | 2,450 |

### Table 24D.—Life sciences and miscellaneous fields

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & management: Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 4,220 | 3,051 | 886 | 283 | 5,834 | 40 | 506 | 4,793 | 495 |
| 1969-70 | 4,650 | 3,289 | 1,004 | 357 | 7,011 | 56 | 566 | 5,830 | 559 |
| 1970-71 | 5,197 | 3,645 | 1,086 | 466 | 7,754 | 61 | 749 | 6,398 | 546 |
| 1971-72 | 5,066 | 3,653 | 971 | 442 | 8,676 | 51 | 851 | 7,041 | 733 |
| 1972-73 | 5,341 | 3,636 | 1,059 | 646 | 9,313 | 83 | 849 | 7,314 | 1,067 |
| 1973-74 | 4,947 | 3,439 | 930 | 578 | 9,403 | 70 | 913 | 7,293 | 1,127 |
| 1974-75 | 4,993 | 3,384 | 991 | 618 | 9,773 | 60 | 951 | 7,443 | 1,319 |
| 1975-76 | 4,897 | 3,392 | 928 | 577 | 10,285 | 55 | 901 | 7,769 | 1,560 |
| 1976-77 | 4,828 | 3,397 | 893 | 538 | 10,473 | 53 | 816 | 7,955 | 1,649 |
| 1977-78 | 4,934 | 3,309 | 971 | 654 | 10,156 | 44 | 823 | 7,586 | 1,703 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 5,010 | 3,350 | 1,000 | 660 | 10,180 | 50 | 860 | 7,490 | 1,780 |
| 1979-80 | 5,240 | 3,420 | 1,080 | 740 | 10,480 | 50 | 870 | 7,610 | 1,950 |
| 1980-81 | 5,370 | 3,510 | 1,100 | 760 | 10,780 | 50 | 930 | 7,760 | 2,040 |
| 1981-82 | 5,380 | 3,480 | 1,120 | 780 | 10,760 | 40 | 930 | 7,640 | 2,150 |
| 1982-83 | 5,240 | 3,350 | 1,110 | 780 | 10,540 | 40 | 900 | 7,420 | 2,180 |
| 1983-84 | 5,120 | 3,250 | 1,100 | 770 | 10,340 | 40 | 880 | 7,240 | 2,180 |
| 1984-85 | 4,970 | 3,140 | 1,080 | 750 | 10,240 | 40 | 860 | 7,140 | 2,200 |
| 1985-86 | 4,860 | 3,040 | 1,080 | 740 | 10,040 | 40 | 830 | 7,010 | 2,160 |
| 1986-87 | 4,740 | 2,950 | 1,070 | 720 | 9,850 | 40 | 820 | 6,880 | 2,110 |
| 1987-88 | 4,630 | 2,850 | 1,070 | 710 | 9,650 | 40 | 800 | 6,740 | 2,070 |
| 1988-89 | 4,510 | 2,760 | 1,060 | 690 | 9,390 | 40 | 780 | 6,550 | 2,020 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 25.—Earned doctor's degrees (except first-professional) conferred on men, with projections, by field of study: United States, 1968-69 to 1988-89

### Table 25A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 3,846 | 2,584 | 1,163 | 87 | 12 |
| 1969-70 | 4,515 | 3,131 | 1,263 | 97 | 24 |
| 1970-71 | 4,790 | 3,272 | 1,355 | 135 | 28 |
| 1971-72 | 5,222 | 3,607 | 1,414 | 165 | 36 |
| 1972-73 | 5,407 | 3,686 | 1,484 | 177 | 60 |
| 1973-74 | 5,359 | 3,499 | 1,645 | 179 | 36 |
| 1974-75 | 5,396 | 3,459 | 1,688 | 216 | 33 |
| 1975-76 | 5,402 | 3,384 | 1,762 | 217 | 39 |
| 1976-77 | 5,083 | 3,053 | 1,770 | 225 | 35 |
| 1977-78 | 4,744 | 2,813 | 1,621 | 267 | 43 |
| | | | Projected[1] | | |
| 1978-79 | 4,730 | 2,800 | 1,620 | 270 | 40 |
| 1979-80 | 4,730 | 2,800 | 1,600 | 290 | 40 |
| 1980-81 | 4,910 | 2,880 | 1,690 | 300 | 40 |
| 1981-82 | 4,930 | 2,840 | 1,720 | 330 | 40 |
| 1982-83 | 4,710 | 2,670 | 1,670 | 330 | 40 |
| 1983-84 | 4,530 | 2,520 | 1,640 | 330 | 40 |
| 1984-85 | 4,440 | 2,460 | 1,600 | 340 | 40 |
| 1985-86 | 4,370 | 2,410 | 1,570 | 350 | 40 |
| 1986-87 | 4,290 | 2,360 | 1,540 | 350 | 40 |
| 1987-88 | 4,210 | 2,310 | 1,500 | 360 | 40 |
| 1988-89 | 4,130 | 2,260 | 1,470 | 360 | 40 |

### Table 25B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 2,318 | 31 | 565 | 424 | 20 | 1,278 |
| 1969-70 | 2,591 | 33 | 592 | 493 | 17 | 1,456 |
| 1970-71 | 2,975 | 33 | 483 | 484 | 126 | 1,849 |
| 1971-72 | 2,979 | 43 | 428 | 526 | 96 | 1,886 |
| 1972-73 | 3,134 | 54 | 449 | 592 | 114 | 1,925 |
| 1973-74 | 2,960 | 65 | 440 | 520 | 146 | 1,789 |
| 1974-75 | 2,726 | 58 | 446 | 455 | 119 | 1,648 |
| 1975-76 | 2,674 | 69 | 447 | 450 | 154 | 1,554 |
| 1976-77 | 2,362 | 62 | 447 | 365 | 130 | 1,358 |
| 1977-78 | 2,198 | 57 | 448 | 294 | 138 | 1,261 |
| | | | Projected[1] | | | |
| 1978-79 | 2,180 | 60 | 450 | 290 | 140 | 1,240 |
| 1979-80 | 2,170 | 50 | 480 | 260 | 150 | 1,230 |
| 1980-81 | 2,090 | 50 | 480 | 240 | 150 | 1,170 |
| 1981-82 | 1,990 | 50 | 490 | 200 | 150 | 1,100 |
| 1982-83 | 1,870 | 50 | 480 | 190 | 150 | 1,000 |
| 1983-84 | 1,830 | 50 | 470 | 190 | 140 | 980 |
| 1984-85 | 1,790 | 50 | 460 | 180 | 150 | 950 |
| 1985-86 | 1,760 | 50 | 450 | 180 | 150 | 930 |
| 1986-87 | 1,720 | 50 | 440 | 180 | 140 | 910 |
| 1987-88 | 1,680 | 50 | 430 | 170 | 140 | 890 |
| 1988-89 | 1,650 | 50 | 420 | 170 | 140 | 870 |

See footnotes at end of table.

**Table 25.—Earned doctor's degrees (except first-professional) conferred on men, with projections, by field of study: United States, 1968-69 to 1988-89—Cont.**

**Table 25C.—Engineering, mathematics, and physical sciences**

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| 1968-69 | 8,123 | 1,029 | 62 | 3,379 | 3,653 |
| 1969-70 | 8,989 | 1,140 | 105 | 3,667 | 4,077 |
| 1970-71 | 8,990 | 1,106 | 125 | 3,615 | 4,144 |
| 1971-72 | 8,673 | 1,039 | 155 | 3,649 | 3,830 |
| 1972-73 | 8,323 | 966 | 181 | 3,438 | 3,738 |
| 1973-74 | 7,750 | 931 | 189 | 3,257 | 3,373 |
| 1974-75 | 7,431 | 865 | 199 | 3,042 | 3,325 |
| 1975-76 | 6,870 | 762 | 221 | 2,755 | 3,132 |
| 1976-77 | 6,446 | 714 | 197 | 2,513 | 3,022 |
| 1977-78 | 6,066 | 681 | 181 | 2,383 | 2,821 |
| | | | Projected[1] | | |
| 1978-79 | 5,800 | 630 | 180 | 2,260 | 2,730 |
| 1979-80 | 5,800 | 630 | 180 | 2,230 | 2,760 |
| 1980-81 | 5,640 | 580 | 170 | 2,250 | 2,640 |
| 1981-82 | 5,510 | 530 | 160 | 2,280 | 2,540 |
| 1982-83 | 5,380 | 520 | 160 | 2,220 | 2,480 |
| 1983-84 | 5,280 | 510 | 160 | 2,180 | 2,430 |
| 1984-85 | 5,140 | 500 | 150 | 2,120 | 2,370 |
| 1985-86 | 5,040 | 490 | 150 | 2,080 | 2,320 |
| 1986-87 | 4,950 | 480 | 150 | 2,040 | 2,280 |
| 1987-88 | 4,840 | 470 | 140 | 2,000 | 2,230 |
| 1988-89 | 4,720 | 460 | 140 | 1,950 | 2,170 |

**Table 25D.—Life sciences and miscellaneous fields**

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & management: Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 3,702 | 2,582 | 873 | 247 | 4,763 | 38 | 494 | 3,834 | 397 |
| 1969-70 | 4,095 | 2,820 | 976 | 299 | 5,700 | 53 | 559 | 4,638 | 450 |
| 1970-71 | 4,494 | 3,050 | 1,055 | 389 | 6,281 | 58 | 729 | 5,043 | 451 |
| 1971-72 | 4,338 | 3,031 | 945 | 362 | 6,878 | 51 | 831 | 5,381 | 615 |
| 1972-73 | 4,442 | 2,926 | 1,031 | 485 | 7,265 | 82 | 797 | 5,501 | 885 |
| 1973-74 | 4,084 | 2,740 | 897 | 447 | 7,212 | 66 | 867 | 5,316 | 963 |
| 1974-75 | 4,040 | 2,641 | 958 | 441 | 7,224 | 56 | 914 | 5,147 | 1,107 |
| 1975-76 | 3,941 | 2,663 | 867 | 411 | 7,380 | 50 | 854 | 5,176 | 1,300 |
| 1976-77 | 3,868 | 2,671 | 831 | 366 | 7,383 | 49 | 765 | 5,186 | 1,383 |
| 1977-78 | 3,822 | 2,511 | 909 | 402 | 6,828 | 41 | 754 | 4,630 | 1,403 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 3,880 | 2,530 | 940 | 410 | 6,790 | 40 | 780 | 4,510 | 1,460 |
| 1979-80 | 4,000 | 2,540 | 1,010 | 450 | 6,900 | 40 | 790 | 4,490 | 1,580 |
| 1980-81 | 4,120 | 2,630 | 1,030 | 460 | 6,950 | 40 | 840 | 4,400 | 1,670 |
| 1981-82 | 4,150 | 2,630 | 1,050 | 470 | 6,860 | 30 | 840 | 4,230 | 1,760 |
| 1982-83 | 4,020 | 2,520 | 1,040 | 460 | 6,730 | 30 | 820 | 4,110 | 1,770 |
| 1983-84 | 3,910 | 2,430 | 1,030 | 450 | 6,630 | 30 | 800 | 4,020 | 1,780 |
| 1984-85 | 3,790 | 2,340 | 1,010 | 440 | 6,550 | 30 | 780 | 3,940 | 1,800 |
| 1985-86 | 3,690 | 2,250 | 1,010 | 430 | 6,410 | 30 | 750 | 3,860 | 1,770 |
| 1986-87 | 3,590 | 2,170 | 1,000 | 420 | 6,280 | 30 | 740 | 3,780 | 1,730 |
| 1987-88 | 3,490 | 2,090 | 990 | 410 | 6,150 | 30 | 720 | 3,710 | 1,690 |
| 1988-89 | 3,390 | 2,010 | 980 | 400 | 5,976 | 30 | 700 | 3,590 | 1,650 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 26.—Earned doctor's degrees (except first-professional) conferred on women, with projections, by field of study: United States, 1968-69 to 1988-89

### Table 26A.—Social sciences

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| 1968-69 | 753 | 369 | 345 | 34 | 5 |
| 1969-70 | 868 | 461 | 357 | 34 | 16 |
| 1970-71 | 1,012 | 531 | 427 | 43 | 11 |
| 1971-72 | 1,167 | 626 | 467 | 46 | 28 |
| 1972-73 | 1,396 | 707 | 605 | 42 | 42 |
| 1973-74 | 1,555 | 789 | 691 | 51 | 24 |
| 1974-75 | 1,761 | 915 | 754 | 69 | 23 |
| 1975-76 | 1,911 | 958 | 819 | 102 | 32 |
| 1976-77 | 2,025 | 884 | 991 | 110 | 40 |
| 1977-78 | 2,033 | 915 | 966 | 128 | 24 |
| | | | Projected[1] | | |
| 1978-79 | 2,100 | 920 | 1,010 | 140 | 30 |
| 1979-80 | 2,240 | 980 | 1,070 | 160 | 30 |
| 1980-81 | 2,190 | 940 | 1,050 | 170 | 30 |
| 1981-82 | 2,140 | 910 | 1,020 | 180 | 30 |
| 1982-83 | 2,080 | 880 | 990 | 180 | 30 |
| 1983-84 | 2,070 | 870 | 970 | 200 | 30 |
| 1984-85 | 2,040 | 860 | 960 | 190 | 30 |
| 1985-86 | 2,000 | 840 | 940 | 190 | 30 |
| 1986-87 | 1,980 | 830 | 930 | 190 | 30 |
| 1987-88 | 1,940 | 820 | 910 | 180 | 30 |
| 1988-89 | 1,900 | 800 | 890 | 180 | 30 |

### Table 26B.—Humanities

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| 1968-69 | 806 | 1 | 119 | 235 | 2 | 449 |
| 1969-70 | 885 | 2 | 142 | 267 | 0 | 474 |
| 1970-71 | 1,024 | 3 | 138 | 297 | 19 | 567 |
| 1971-72 | 1,184 | 7 | 144 | 315 | 15 | 703 |
| 1972-73 | 1,424 | 4 | 167 | 399 | 25 | 829 |
| 1973-74 | 1,425 | 4 | 145 | 403 | 29 | 844 |
| 1974-75 | 1,512 | 11 | 203 | 402 | 46 | 850 |
| 1975-76 | 1,543 | 13 | 173 | 414 | 50 | 893 |
| 1976-77 | 1,495 | 11 | 215 | 387 | 41 | 841 |
| 1977-78 | 1,492 | 16 | 260 | 355 | 53 | 808 |
| | | | Projected[1] | | | |
| 1978-79 | 1,490 | 20 | 260 | 350 | 60 | 800 |
| 1979-80 | 1,550 | 20 | 290 | 350 | 60 | 830 |
| 1980-81 | 1,490 | 20 | 300 | 320 | 60 | 790 |
| 1981-82 | 1,440 | 20 | 310 | 290 | 70 | 750 |
| 1982-83 | 1,400 | 20 | 320 | 280 | 70 | 710 |
| 1983-84 | 1,370 | 20 | 320 | 270 | 70 | 690 |
| 1984-85 | 1,320 | 20 | 310 | 270 | 60 | 660 |
| 1985-86 | 1,290 | 20 | 310 | 260 | 60 | 640 |
| 1986-87 | 1,260 | 20 | 300 | 260 | 60 | 620 |
| 1987-88 | 1,230 | 20 | 300 | 250 | 60 | 600 |
| 1988-89 | 1,210 | 20 | 300 | 250 | 60 | 580 |

See footnotes at end of table.

**Table 26.—Earned doctor's degrees (except first-professional) conferred on women, with projections, by field of study: United States, 1968-69 to 1988-89—Cont.**

**Table 26C.—Engineering, mathematics, and physical sciences**

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| 1968-69 | 288 | 68 | 2 | 12 | 206 |
| 1969-70 | 357 | 96 | 2 | 24 | 235 |
| 1970-71 | 365 | 93 | 3 | 23 | 246 |
| 1971-72 | 396 | 89 | 12 | 22 | 273 |
| 1972-73 | 439 | 102 | 15 | 54 | 268 |
| 1973-74 | 417 | 100 | 9 | 55 | 253 |
| 1974-75 | 491 | 110 | 14 | 66 | 301 |
| 1975-76 | 482 | 94 | 23 | 66 | 299 |
| 1976-77 | 520 | 109 | 19 | 73 | 319 |
| 1977-78 | 508 | 124 | 15 | 57 | 312 |
| | | | Projected[1] | | |
| 1978-79 | 510 | 120 | 20 | 60 | 310 |
| 1979-80 | 540 | 130 | 20 | 60 | 330 |
| 1980-81 | 510 | 120 | 20 | 50 | 320 |
| 1981-82 | 500 | 120 | 20 | 50 | 310 |
| 1982-83 | 480 | 110 | 20 | 50 | 300 |
| 1983-84 | 480 | 110 | 20 | 50 | 300 |
| 1984-85 | 470 | 110 | 20 | 50 | 290 |
| 1985-86 | 470 | 110 | 20 | 50 | 290 |
| 1986-87 | 450 | 100 | 20 | 50 | 280 |
| 1987-88 | 450 | 100 | 20 | 50 | 280 |
| 1988-89 | 440 | 90 | 20 | 50 | 280 |

**Table 26D.—Life sciences and miscellaneous fields**

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & management: Accounting | Business & management | Education | Other[2] |
|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 518 | 469 | 13 | 36 | 1,071 | 2 | 12 | 939 | 98 |
| 1969-70 | 555 | 469 | 28 | 58 | 1,311 | 3 | 7 | 1,192 | 109 |
| 1970-71 | 703 | 595 | 31 | 77 | 1,473 | 3 | 20 | 1,355 | 95 |
| 1971-72 | 728 | 622 | 26 | 80 | 1,798 | 0 | 20 | 1,660 | 118 |
| 1972-73 | 899 | 710 | 28 | 161 | 2,048 | 1 | 52 | 1,813 | 182 |
| 1973-74 | 863 | 699 | 33 | 131 | 2,191 | 4 | 46 | 1,977 | 164 |
| 1974-75 | 953 | 743 | 33 | 177 | 2,549 | 4 | 37 | 2,296 | 212 |
| 1975-76 | 956 | 729 | 61 | 166 | 2,905 | 5 | 47 | 2,593 | 260 |
| 1976-77 | 960 | 726 | 62 | 172 | 3,090 | 4 | 51 | 2,769 | 266 |
| 1977-78 | 1,112 | 798 | 62 | 252 | 3,328 | 3 | 69 | 2,956 | 300 |
| | | | | | Projected[1] | | | | |
| 1978-79 | 1,130 | 820 | 60 | 250 | 3,390 | 10 | 80 | 2,980 | 320 |
| 1979-80 | 1,240 | 880 | 70 | 290 | 3,580 | 10 | 80 | 3,120 | 370 |
| 1980-81 | 1,250 | 880 | 70 | 300 | 3,830 | 10 | 90 | 3,360 | 370 |
| 1981-82 | 1,230 | 850 | 70 | 310 | 3,900 | 10 | 90 | 3,410 | 390 |
| 1982-83 | 1,220 | 830 | 70 | 320 | 3,810 | 10 | 80 | 3,310 | 410 |
| 1983-84 | 1,210 | 820 | 70 | 320 | 3,710 | 10 | 80 | 3,220 | 400 |
| 1984-85 | 1,180 | 800 | 70 | 310 | 3,690 | 10 | 80 | 3,200 | 400 |
| 1985-86 | 1,170 | 790 | 70 | 310 | 3,630 | 10 | 80 | 3,150 | 390 |
| 1986-87 | 1,150 | 780 | 70 | 300 | 3,570 | 10 | 80 | 3,100 | 380 |
| 1987-88 | 1,140 | 760 | 80 | 300 | 3,500 | 10 | 80 | 3,030 | 380 |
| 1988-89 | 1,120 | 750 | 80 | 290 | 3,420 | 10 | 80 | 2,960 | 370 |

[1]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

[2]Includes home economics, law, military science, theology, and interdisciplinary studies.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES. U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 27.—First-professional degrees, with projections, by field of study: United States 1968-69 to 1988-89

Table 27A.—Total

| Year | Total | Medicine[1] | Dentistry[2] | Optometry | Osteopathic medicine | Pharmacy | Podiatric medicine | Veterinary medicine | Chiropractic | Law[3] | Theology[4] | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 35,114 | 8,025 | 3,408 | 463 | 427 | ... | 254 | 1,146 | ... | 17,053 | 4,338 | ... |
| 1969-70 | 34,578 | 8,314 | 3,718 | 445 | 431 | ... | 250 | 1,206 | ... | 14,916 | 5,298 | ... |
| 1970-71 | 37,946 | 8,919 | 3,745 | 531 | 472 | ... | 240 | 1,252 | ... | 17,421 | 5,055 | 311 |
| 1971-72 | 43,411 | 9,253 | 3,862 | 670 | 484 | ... | 279 | 1,247 | ... | 21,764 | 5,568 | 284 |
| 1972-73 | 50,018 | 10,307 | 4,047 | 771 | 523 | ... | 278 | 1,299 | ... | 27,205 | 5,283 | 305 |
| 1973-74 | 53,816 | 11,356 | 4,440 | 791 | 685 | ... | 371 | 1,384 | ... | 29,326 | 5,041 | 422 |
| 1974-75 | 55,916 | 12,447 | 4,773 | 792 | 665 | ... | 351 | 1,415 | ... | 29,296 | 5,095 | 1,082 |
| 1975-76 | 62,649 | 13,426 | 5,425 | 975 | 818 | 439 | 428 | 1,532 | 1,577 | 32,293 | 5,706 | 30 |
| 1976-77 | 63,359 | 12,461 | 5,138 | 953 | 852 | 527 | 486 | 1,586 | 1,368 | 34,104 | 5,861 | 23 |
| 1977-78 | 66,581 | 14,279 | 5,189 | 1,014 | 944 | 547 | 543 | 1,635 | 1,661 | 34,402 | 6,367 | ... |
| | | | | | | Projected[5] | | | | | | |
| 1978-79 | 67,830 | 15,010 | 5,310 | 1,000 | 1,030 | 580 | 570 | 1,650 | 1,680 | 34,600 | 6,400 | ... |
| 1979-80 | 68,450 | 15,280 | 5,210 | 1,000 | 1,090 | 600 | 570 | 1,800 | 1,690 | 34,660 | 6,550 | ... |
| 1980-81 | 69,560 | 15,830 | 5,380 | 1,020 | 1,170 | 620 | 580 | 1,890 | 1,700 | 34,770 | 6,600 | ... |
| 1981-82 | 70,660 | 16,410 | 5,460 | 1,050 | 1,250 | 640 | 600 | 1,980 | 1,710 | 34,810 | 6,750 | ... |
| 1982-83 | 71,710 | 17,030 | 5,460 | 1,050 | 1,300 | 660 | 600 | 2,110 | 1,710 | 34,900 | 6,890 | ... |
| 1983-84 | 72,360 | 17,370 | 5,460 | 1,050 | 1,330 | 660 | 600 | 2,160 | 1,710 | 35,000 | 7,020 | ... |
| 1984-85 | 72,860 | 17,480 | 5,460 | 1,070 | 1,340 | 660 | 620 | 2,250 | 1,710 | 35,100 | 7,170 | ... |
| 1985-86 | 73,340 | 17,590 | 5,460 | 1,070 | 1,340 | 660 | 620 | 2,360 | 1,710 | 35,220 | 7,310 | ... |
| 1986-87 | 73,780 | 17,690 | 5,460 | 1,070 | 1,350 | 660 | 620 | 2,420 | 1,710 | 35,350 | 7,450 | ... |
| 1987-88 | 74,200 | 17,780 | 5,460 | 1,070 | 1,360 | 660 | 620 | 2,460 | 1,710 | 35,480 | 7,600 | ... |
| 1988-89 | 74,570 | 17,840 | 5,460 | 1,070 | 1,360 | 660 | 620 | 2,480 | 1,710 | 35,630 | 7,740 | ... |

[1]M.D. degrees only.
[2]D.D.S. or D.M.D. degrees.
[3]L.L.B. or J.D. degrees.
[4]B.D., M. Div., Rabbi or the first-professional degree in theology.
[5]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education*.

## Table 27.—First-professional degrees, with projections, by field of study: United States 1968-69 to 1988-89—Cont.

Table 27B.—Men

| Year | Total | Medicine[1] | Dentistry[2] | Optometry | Osteopathic medicine | Pharmacy | Podiatric medicine | Veterinary medicine | Chiropractic | Law[3] | Theology[4] | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 33,595 | 7,415 | 3,376 | 455 | 419 | ... | 251 | 1,079 | ... | 16,373 | 4,227 | ... |
| 1969-70 | 32,794 | 7,615 | 3,684 | 422 | 419 | ... | 248 | 1,116 | ... | 14,115 | 5,175 | ... |
| 1970-71 | 35,544 | 8,110 | 3,703 | 518 | 461 | ... | 235 | 1,154 | ... | 16,181 | 4,937 | 245 |
| 1971-72 | 40,723 | 8,423 | 3,819 | 655 | 467 | ... | 278 | 1,130 | ... | 20,266 | 5,460 | 225 |
| 1972-73 | 46,489 | 9,388 | 3,992 | 751 | 508 | ... | 277 | 1,166 | ... | 25,037 | 5,101 | 269 |
| 1973-74 | 48,530 | 10,093 | 4,355 | 758 | 666 | ... | 367 | 1,229 | ... | 25,986 | 4,764 | 312 |
| 1974-75 | 48,956 | 10,818 | 4,627 | 752 | 630 | ... | 347 | 1,190 | ... | 24,881 | 4,748 | 963 |
| 1975-76 | 52,892 | 11,252 | 5,187 | 900 | 759 | 309 | 417 | 1,255 | 1,439 | 26,085 | 5,271 | 27 |
| 1976-77 | 52,374 | 10,891 | 4,764 | 848 | 777 | 382 | 470 | 1,224 | 1,252 | 26,447 | 5,307 | 12 |
| 1977-78 | 52,270 | 11,210 | 4,623 | 881 | 826 | 382 | 517 | 1,234 | 1,495 | 25,457 | 5,645 | ... |
| | | | | | | Projected[5] | | | | | | |
| 1978-79 | 52,590 | 11,500 | 4,660 | 850 | 890 | 400 | 540 | 1,190 | 1,500 | 25,390 | 5,670 | ... |
| 1979-80 | 52,540 | 11,540 | 4,530 | 840 | 910 | 400 | 540 | 1,300 | 1,500 | 25,170 | 5,810 | ... |
| 1980-81 | 53,030 | 11,890 | 4,680 | 860 | 980 | 400 | 540 | 1,360 | 1,500 | 25,000 | 5,820 | ... |
| 1981-82 | 53,330 | 12,080 | 4,750 | 890 | 1,050 | 400 | 560 | 1,430 | 1,500 | 24,740 | 5,930 | ... |
| 1982-83 | 53,580 | 12,300 | 4,750 | 890 | 1,090 | 400 | 560 | 1,520 | 1,500 | 24,530 | 6,040 | ... |
| 1983-84 | 53,520 | 12,280 | 4,750 | 890 | 1,120 | 400 | 560 | 1,560 | 1,500 | 24,320 | 6,140 | ... |
| 1984-85 | 53,330 | 12,110 | 4,750 | 900 | 1,120 | 400 | 580 | 1,620 | 1,500 | 24,100 | 6,250 | ... |
| 1985-86 | 53,390 | 12,190 | 4,750 | 900 | 1,120 | 400 | 580 | 1,700 | 1,500 | 23,890 | 6,360 | ... |
| 1986-87 | 53,410 | 12,260 | 4,750 | 900 | 1,130 | 400 | 580 | 1,740 | 1,500 | 23,680 | 6,470 | ... |
| 1987-88 | 53,400 | 12,320 | 4,750 | 900 | 1,140 | 400 | 580 | 1,770 | 1,500 | 23,460 | 6,580 | ... |
| 1988-89 | 53,360 | 12,360 | 4,750 | 900 | 1,140 | 400 | 580 | 1,790 | 1,500 | 23,250 | 6,690 | ... |

[1]M.D. degrees only.
[2]D.D.S. or D.M.D. degrees.
[3]L.L.B. or J.D. degrees.
[4]B.D., M. Div., Rabbi or the first-professional degree in theology.
[5]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education.*



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## Table 27.—First-professional degrees, with projections, by field of study: United States 1968-69 to 1988-89—Cont.

Table 27C.—Women

| Year | Total | Medicine[1] | Dentistry[2] | Optometry | Osteopathic medicine | Pharmacy | Podiatric medicine | Veterinary medicine | Chiropractic | Law[3] | Theology[4] | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1968-69 | 1,519 | 610 | 32 | 8 | 8 | ... | 3 | 67 | ... | 680 | 111 | ... |
| 1969-70 | 1,784 | 699 | 34 | 23 | 12 | ... | 2 | 90 | ... | 801 | 123 | ... |
| 1970-71 | 2,402 | 809 | 42 | 13 | 11 | ... | 5 | 98 | ... | 1,240 | 118 | 66 |
| 1971-72 | 2,688 | 830 | 43 | 15 | 17 | ... | 1 | 117 | ... | 1,498 | 108 | 59 |
| 1972-73 | 3,529 | 919 | 55 | 20 | 15 | ... | 1 | 133 | ... | 2,168 | 182 | 36 |
| 1973-74 | 5,286 | 1,263 | 85 | 33 | 19 | ... | 4 | 155 | ... | 3,340 | 277 | 110 |
| 1974-75 | 6,960 | 1 629 | 146 | 40 | 35 | ... | 4 | 225 | ... | 4,415 | 347 | 119 |
| 1975-76 | 9,757 | 2,174 | 238 | 75 | 59 | 130 | 11 | 277 | 147 | 6,208 | 435 | 3 |
| 1976-77 | 10,985 | 1,570 | 374 | 105 | 75 | 145 | 16 | 362 | 116 | 7,657 | 554 | 11 |
| 1977-78 | 14,311 | 3,069 | 566 | 133 | 118 | 165 | 26 | 401 | 166 | 8,945 | 722 | ... |
| | | | | | | **Projected[5]** | | | | | | |
| 1978-79 | 15,240 | 3,510 | 650 | 150 | 140 | 180 | 30 | 460 | 180 | 9,210 | 730 | ... |
| 1979-80 | 15,910 | 3,740 | 680 | 160 | 180 | 200 | 30 | 500 | 190 | 9,490 | 740 | ... |
| 1980-81 | 16,530 | 3,940 | 700 | 160 | 190 | 220 | 40 | 530 | 200 | 9,770 | 780 | ... |
| 1981-82 | 17,330 | 4,330 | 710 | 160 | 200 | 240 | 40 | 550 | 210 | 10,070 | 820 | .. |
| 1982-83 | 18,130 | 4,730 | 710 | 160 | 210 | 260 | 40 | 590 | 210 | 10,370 | 850 | ... |
| 1983-84 | 18,840 | 5,090 | 710 | 160 | 210 | 260 | 40 | 600 | 210 | 10,680 | 880 | ... |
| 1984-85 | 19,530 | 5,370 | 710 | 170 | 220 | 260 | 40 | 630 | 210 | 11,000 | 920 | ... |
| 1985-86 | 19,950 | 5,400 | 710 | 170 | 220 | 260 | 40 | 660 | 210 | 11,330 | 950 | ... |
| 1986-87 | 20,370 | 5,430 | 710 | 170 | 220 | 260 | 40 | 680 | 210 | 11,670 | 980 | ... |
| 1987-88 | 20,800 | 5,460 | 710 | 170 | 220 | 260 | 40 | 690 | 210 | 12,020 | 1,020 | ... |
| 1988-89 | 21,210 | 5,480 | 710 | 170 | 220 | 260 | 40 | 690 | 210 | 12,380 | 1,050 | ... |

[1]M.D. degrees only.
[2]D.D.S. or D.M.D. degrees.
[3]L.L.B. or J.D. degrees.
[4]B.D., M. Div., Rabbi or the first-professional degree in theology.
[5]For methodological details, see appendix A, section A-2. For primary assumptions made, see appendix B, table B-2.

NOTE.— Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication, *Earned Degrees Conferred by Institutions of Higher Education.*

# Chapter III
# INSTRUCTIONAL STAFF

## Regular Elementary and Secondary Schools

Classroom teachers increased from 2.16 million in 1968 to 2.46 million in 1978. The number is expected to decrease to 2.36 million in 1982 and then begin increasing, reaching 2.50 million in 1988 (figure 21).

Enrollment in public elementary schools reached a peak of 27.7 million in 1971 and then began decreasing, reaching 25.1 million in 1978. But decreases in pupil-teacher ratios[1] over the same period (from 24.9 to 21.3) have more than offset the enrollment declines. As a result, there were 1.18 million teachers in public elementary schools in 1978, nearly 70,000 more than in 1971.

Over the next 5 years, enrollments are expected to continue to decrease from 25.1 million in 1978 to 22.8 million in 1983. However, pupil-teacher ratios in public elementary schools are not expected to decrease rapidly enough during the same period (from 21.3 in 1978 to 20.0 in 1983) to offset the drop of more than 2 million students. As a result, teachers are expected to drop to 1.14 million in 1983, 41,000 less than the 1978 number, but still 26,000 more than the number employed in 1971 when enrollment reached its peak.

Beginning in 1984, enrollment is expected to increase by more than 2 million, reaching 24.9 million in 1988. When combined with a continued gradual decline in pupil-teacher ratios (from 20.0 in 1983 to 18.9 in 1988), the number of classroom teachers should reach 1.32 million in 1988, an increase of 181,000 teachers over the 1983 level and 140,000 teachers over the 1978 level.

The above intermediate alternative classroom teacher projections are based primarily upon the assumption that pupil-teacher ratios will equal the average of the high and low alternative pupil-teacher projections. The high alternative pupil-teacher ratio projection, which yields low alternative teacher projections, is based on the assumption that pupil-teacher ratios will remain at about the 1978 level through 1988. The low alternative pupil-teacher ratio projection, which yields high classroom teacher projections, is based primarily on the assumption that pupil-teacher ratios will continue to decrease according to past trends, with the restriction that ratios cannot decrease below a lower limit (15.0 for secondary schools and 16.0 for elementary schools).

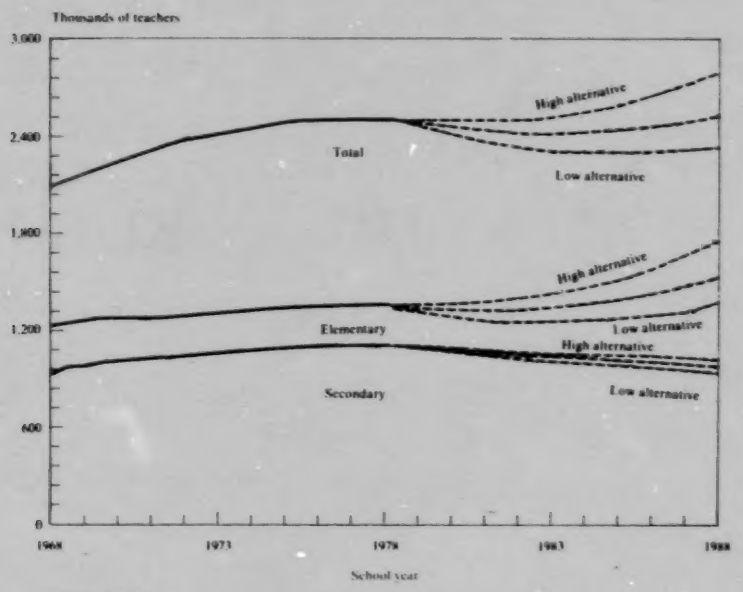
If pupil-teacher ratios remain at 1978 levels (low alternative classroom teacher projection) then the number of classroom teachers in public elementary schools will only reach 1.17 million in 1988, 149,000 fewer teachers than under the intermediate alternative. Under the high alternative classroom teacher projection, there will be 1.5 million teachers in 1988, 192,000 more than under the intermediate alternative and 341,000 more than under the low alternative.

Enrollment in public secondary schools increased from 17.6 million in 1968 to 19.2 million in 1975. Since then, enrollments have decreased back to the 1968 level of 17.6 million. However, during the 1968 to 1978 period, pupil-teacher ratios decreased from 20.4 to 17.2, as the number of classroom teachers increased from 860,000 in 1968 to 1,021,000 in 1978.

Throughout the next 10 years, enrollments in secondary schools are expected to decline, as the low birth cohorts of the 1960's and early 1970's move through elementary school into secondary schools. Although pupil-teacher ratios are expected to continue decreasing under the intermediate alternative,

[1]Decreasing pupil-teacher ratios do not imply decreasing class sizes, since many additional teachers have been hired to meet the special needs of students. The teaching of special students typically requires small pupil-teacher ratios, resulting in nominal decreases in overall class size.

**Figure 21.—Classroom teachers in elementary and secondary schools, with alternative projections: United States, fall 1968 to 1988**




Source: Table 28.

the pupil-teacher ratio in public secondary schools is already at such a low level, that it seems unreasonable to expect large decreases in the future. Therefore, decreases in pupil-teacher ratios will not be nearly enough to offset the expected decrease of over 3 million students in public secondary schools over the next ten years. As a result, the number of classroom teachers in public secondary schools is expected to be 876,000 in 1988, 145,000 fewer teachers than in 1978.

Under the low alternative projection (constant pupil-teacher ratios), the number of teachers in public secondary schools will drop by 180,000 to 841,000 in 1988. Under the high alternative projection, the decrease is expected to be only 107,000 bringing the total number of teachers in public secondary schools to 914,000 in 1988.

Large enrollment declines in Catholic elementary schools resulted in an enrollment decline in all regular nonpublic elementary schools from 4.4 million in 1968 to 3.6 million in 1973. But the number of teachers in Catholic elementary schools remained at about the same level throughout this period. As a result, pupil-teacher ratios in nonpublic schools decreased from 29.8 in 1968 to 23.6 in 1973. While enrollments were dropping by 800,000 students, the number of teachers in nonpublic elementary schools actually increased from 147,000 in 1968 to 153,000 in 1973.

Beginning in 1974, enrollments in nonpublic elementary schools leveled off at 3.6 million while pupil-teacher ratios continued declining. By 1978, the number of classroom teachers in these schools increased to 174,000, over 20,000 more teachers than in 1973.

Enrollments in nonpublic elementary schools are expected to remain fairly constant over the next 4 years and then begin a gradual increase. Over the same 10 year period, pupil-teacher ratios are expected to decrease from 20.1 to 18.8. In 1988, the number of teachers in these schools is expected to be 211,000 an increase of nearly 40,000 teachers.

Should the 1978 pupil-teacher ratio in nonpublic elementary schools hold constant (low alternative classroom teacher projection) then the number of teachers will increase by only 20,000 teachers, reaching 194,000 in 1988. If pupil-teacher ratios continue their past steep decline, reaching 17.1 by 1988, then nonpublic elementary teachers will increase by nearly 60,000 teachers, to 232,000 in 1988 (high alternative classroom teacher projection).

Since pupil-teacher ratios in nonpublic secondary schools have remained constant at 16.4 for most of

the past 10 years, the only projection considered for the 1979 to 1988 projection period is 16.4. For most of the past 10 years, enrollment has fluctuated around 1.4 million and this is expected to continue until the last few years of the projection period when enrollments are expected to increase to 1.6 million in 1988.

Projections of classroom teachers in nonpublic secondary schools, show the same pattern as enrollment projections, fluctuating around 90,000 for most of the projected period before increasing to 95,000 in 1988.

## Demand for Additional Teachers

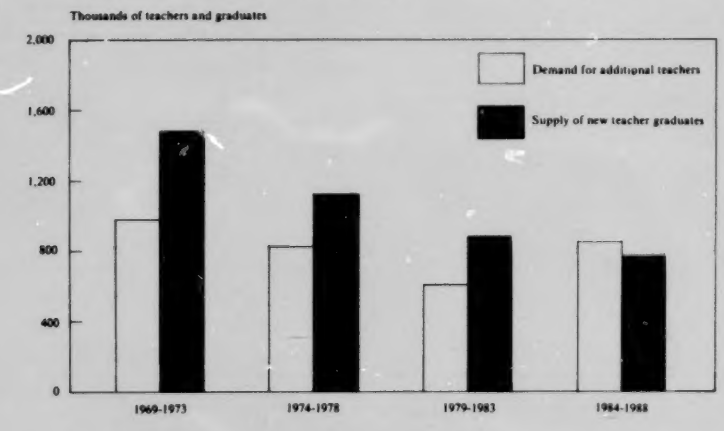
### Public Schools

The total demand for additional public elementary and secondary school teachers (not employed in the public schools the previous year) includes those needed to allow for enrollment changes, for lowering pupil-teacher ratios, and for replacement of teachers leaving the profession (turnover). The cumulative demand for additional public school teachers (including returnees to the profession), during the 5-year period fall 1969 to fall 1973, was estimated at 912,000 (table 30) and during the next 5-year period (1974 to 1978) was estimated to have dropped to 716,000. For the current 5-year period (1979 to 1983), the demand for additional teachers is expected to decrease further to 526,000; and for the following 5-year period 1984 to 1988, it will increase to 745,000 (figure 22). Therefore, about 1,271,000 new teachers or returnees to the profession are expected to be hired during the next 10 years, 1979 to 1988. This is about 360,000 fewer teachers than were hired during the period 1969 to 1978.

Table 30 includes alternative projections of the demand for additional public school teachers based on high and low turnover rates. But, all three demand projections are based on intermediate classroom teacher projections. The number of teachers necessary to respond to enrollment changes and pupil-teacher ratio changes was computed for each year as the difference between the total employed for the current year and the total employed for the previous year. The turnover estimate for 1969 was based on the assumption that eight percent of total classroom teachers had left the profession either temporarily or permanently.[2] Eight percent is the historical turnover rate. However, enrollment decreases combined with increased numbers of college graduates prepared to teach led to significant changes in the job market for

[2]A. Stafford Metz and Howard L. Fleischman, U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Teacher Turnover in Public Schools, Fall 1968 to Fall 1969* (Washington, D.C., U.S. Government Printing Office, 1974).

**Figure 22.—Estimated demand for additional teachers in regular elementary and secondary schools, and estimated supply of new teacher graduates, 5-year totals: United States, fall 1969 to 1988**




Source: Table 32.

teachers in the early 1970's. Therefore, it was estimated that the turnover rate decreased by one-half of 1 percent per year until it reached 6 percent in 1973. This 6 percent turnover rate was used for the intermediate alternative projections through 1988.

Although data on teacher turnover were not collected since the NCES study in 1969, several factors support the assumption that the turnover rate declined to 6 percent: (1) enrollment began decreasing in 1971 and is expected to continue decreasing through 1984; (2) as the demand for additional teachers decreased, the supply of new teachers rose from 233,000 in 1968 to 317,000 in 1972 resulting in a large surplus of teachers; (3) as the surplus of teachers grew, the job market for college graduates in general tightened; and (4) budgetary constraints were imposed more severely on school systems.

One reaction to the budgetary constraints was the hiring predominantly of beginning teachers or teachers with few years of experience, since years of teaching experience is often a key element in determining teacher's salaries. This occurred because opportunities in other fields were limited by a tight job market and the ability of experienced teachers to return to the profession was limited by the scarcity of teaching jobs, the oversupply of teachers, and the reluctance on the part of school systems to hire experienced teachers.

At first glance with fewer teachers leaving the profession, it seems reasonable that the average age of the teaching force would increase. However, the table below based on unpublished sample data from the Bureau of Labor Statistics indicates that just the opposite has occurred.

**Percent of teachers, by age**

| Year | 24 and under | 25-34 | 35-44 | 45-54 | 55 and over |
|---|---|---|---|---|---|
| 1968 | 16.4 | 26.2 | 22.4 | 17.1 | 18.0 |
| 1969 | 17.5 | 26.6 | 22.3 | 17.3 | 16.2 |
| 1970 | 17.3 | 27.3 | 22.9 | 17.0 | 15.5 |
| 1971 | 16.9 | 30.9 | 22.2 | 16.1 | 14.1 |
| 1972 | 16.4 | 34.5 | 21.4 | 15.1 | 12.7 |
| 1973 | 17.2 | 35.6 | 19.9 | 16.1 | 11.2 |
| 1974 | 14.7 | 38.4 | 20.9 | 17.1 | 8.9 |
| 1975 | 13.0 | 38.7 | 22.1 | 15.9 | 10.1 |
| 1976 | 11.8 | 38.4 | 23.0 | 16.4 | 10.3 |
| 1977 | 11.8 | 36.8 | 23.2 | 17.9 | 10.3 |
| 1978 | 9.8 | 40.9 | 22.5 | 16.9 | 10.2 |

This table shows that the proportion of teachers 55-years-old and over has decreased about 8 percent from 1968 to 1978 while the proportion of teachers 34-years-old and under has increased 8 percent. This increase in the proportion of teachers 34-years-old and under is due to the large number of new college graduates hired during the peak enrollment period of the late 1960's and early 1970's.

If we take 55-years-old as minimal retirement age, then 73 percent of the teaching force in 1978 were more than 10 years away from the minimum retirement age, compared to only 65 percent in 1968.

The age distribution of the teaching force in conjunction with an expected continued tight job market for college graduates in the 1980's and a significant teacher surplus throughout most of the next 10 years would seem to argue in favor of the continued use of the 6 percent turnover rate.

### Nonpublic Schools

The demand for additional nonpublic elementary and secondary teachers increased from 78,000 in the 1969 to 1973 period to 103,000 during the 1974 to 1978 period (table 31). During the next 5 years, 1979 to 1983, the demand is expected to decrease slightly to 96,000 and then increase to 116,000 in the 1983 to 1988 period as enrollments begin climbing.

The numbers needed to allow for enrollment changes and pupil-teacher ratio changes have been computed in the same manner as for public schools. The turnover rate for nonpublic schools has been estimated at 6 percent for both the past and projected periods. In 1968 and 1969, when the public turnover rate was 8 percent, 56 percent of the teaching staff in Catholic schools (70 percent of all nonpublic teachers) were religious teachers. Since religious teachers are assumed to have a lower turnover rate than lay teachers, it was estimated that the turnover rate in nonpublic schools in 1968 and 1969 was 6 percent.

During the 1970's, the percentage of religious teachers declined in Catholic schools. In 1978, when teachers in Catholic schools made up 60 percent of teachers in nonpublic schools, religious teachers only accounted for 33 percent of the teachers in Catholic schools. Therefore, the 6 percent turnover rate used for public teachers in the 1970's and 1980's was applied to nonpublic teachers also.

## Supply of Additional Teachers

The supply of additional teachers consists of new teacher graduates and former teacher graduates who were not employed as teachers in the previous year.

New teacher graduates are those graduates of institutions of higher education in a given year who are prepared to teach for the first time. Former teacher graduates are those who graduated in preceding years and are prepared to teach, but did not hold teaching positions in the previous year. Some of these former teacher graduates are former teachers; the remainder have never been employed as teachers.

## New Teacher Graduates

Data on new teacher graduates have been collected by the National Education Association for many years. The number of new teacher graduates increased from 264,000 in 1969 to 317,000 in 1972 (table 32). Since 1972, the number has decreased each year reaching 190,000 in 1978[3]. As a percent of bachelor's degree recipients, new teacher graduates have declined from 36 percent in 1969 to 21 percent in 1978. According to a recent sample survey carried out by the Higher Education Panel,[4] the number of new teacher graduates was anticipated to drop another 3 percent in 1979.

Undoubtedly, these decreases are in part the result of the publicity give to the surplus of teachers since the early 1970's. However, a recent NCES sample survey of college graduates indicates that in May 1978, the underemployment rate for 1976-77 education graduates was lower than the average for all 1976-77 college graduates[5]. As defined in chapter II, underemployed college graduates are those not working in an occupation for which their credentials would seem to qualify them and who reported that, in their opinion, their job does not require a college degree. The underemployment rate for education graduates was about the same as the rates for graduates in architecture, mathematics, business and commerce, and physical sciences; significantly lower than graduates in agriculture, biological sciences, and communications, and much lower than in fine and applied arts, foreign languages, letters, social sciences, and psychology. Only graduates in computer sciences, engineering, and health professions had significantly lower underemployment rates.

When survey results of 1976-77 graduates are compared to those of 1974-75 graduates, the outlook for education graduates has appreciably improved. In May 1976, only about half of the 1974-75 graduates seeking teaching jobs were employed as full-time teachers. While in May 1978, 65 percent of the 1976-77 graduates seeking teaching jobs were employed as full-time teachers.

Although job opportunities for new teacher graduates have improved, there still is a fairly large number who are unable to find teaching jobs. And this situation will probably continue for the next 3 or 4 years as enrollments continue to decline. However, when enrollments start increasing in the mid 1980's the job outlook for new teacher graduates should improve greatly.

Table 32 shows the estimated supply of new teacher graduates, the estimated demand for additional teachers, and the percent of supply of new teacher graduates to the demand for additional teachers. Table 32 is not a comparison of the supply of and demand for additional teachers because it does not take into account: (1) new teacher graduates who do not seek teaching jobs, (2) former teacher graduates not currently in the labor force who are seeking teaching jobs, (3) unemployed teachers, and (4) former teacher graduates employed in other occupations who are seeking teaching jobs. In addition, the comparisons in table 32 do not attempt to take into account the interaction of supply and demand nor the effects of exogenous variables such as state and local expenditures. Some factors were not included in the analysis because data for these variables are not available. The inclusion of other factors involves the development of econometric models which are planned for inclusion in future editions of *Projections*. However, the comparisons in table 32 have proven useful as a barometer of supply and demand imbalances.

On the basis of these comparisons, it appears that the job outlook for new teacher graduates will be quite favorable in the late 1980's. Should the percent of teacher graduates to all bachelor's degree recipients drop to 13 percent by 1988, while the turnover rate increases back to 8 percent, then teacher shortages may result in the late 1980's (low supply projection-high demand projection). However, as

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[3]Published and unpublished data from William S. Graybeal, National Education Association, *Teacher Supply and Demand in Public Schools* Washington, D.C., 1969 to 1978.

[4]Frank J. Atelsek and Irene Gamberg, *American Council on Education, Newly Qualified Elementary and Secondary School Teachers, 1977-78 and 1978-79*, Higher Education Panel Report, Number 45, Washington, D.C., 1980.

[5]A. Stafford Metz and Jane L. Crane, U.S. Department of Education, National Center for Education Statistics, *New Teachers in the Job Market*, forthcoming.

the job outlook for teachers continues to improve, it is unlikely that the percent of new teacher graduates to all bachelor's degrees will decrease to 13 percent. The age distribution of the teaching force and the general job outlook for college graduates also argue against a return to an 8 percent turnover rate. therefore, if the turnover rate remains at 6 percent, and if the percent of new teacher graduates to all bachelor's degrees slow its decline, (intermediate alternative projection) then the reserve pool of teachers (explained later) should be adequate to make up for the small deficits between new teacher graduates and the demand for additional teachers foreseen for the late 1980's.

Should the improved job market for teacher graduates have the effect of maintaining the percentage that new teacher graduates are of bachelor's degrees at about the level of 20 percent, and should the turnover rate drop to 4.8 percent, at which rate most attrition would be the result of retirement, sickness and death (high supply projection-low demand projection) then the supply of new teacher graduates would still exceed the demand for additional teachers throughout the projection period.

## Proportion of New Teacher Graduates Seeking Teaching Positions

The two NCES studies of recent college graduates (1974-75 and 1977-78) indicate that about 75 percent of new teacher graduates in these two years actually sought full-time teaching positions. If this proportion remains applicable over the projection period, then the supply of new teacher graduates in table 32 should be reduced by about 40,000 each year through 1988.

## The Reserve Pool of Teachers

As previously stated, the supply of new teacher graduates constitutes only part of the total supply of additional teachers. The remainder is referred to in *Projections* as the "reserve pool of teachers" and is defined as former teacher graduates who are currently not employed as teachers. Each of these persons falls into one of the following labor force categories: (1) unemployed, (2) not currently in the labor force, (3) employed in a nonteaching job, or (4) never actively sought employment. Very limited data exist on which to base rough estimates of the first two components, while no information is available for the last two.

In 1970 there were about 30,000 unemployed experienced teachers (this number does not include inexperienced former teacher graduates also unemployed). Considering the large surplus of teachers that has been produced since 1970, it seems reasonable to assume that the total number of unemployed former teachers is now substantially larger than 30,000, but a more concise estimate is not possible. Using Bureau of the Census data, the National Education Association[6] estimates that there were about 650,000 former teachers in the labor reserve in 1978 (excluding former teacher graduates who never taught). There is no information on the number of former teacher graduates who either are employed in nonteaching jobs or never sought employment.

An estimate of one million former teachers and former teacher graduates in the reserve pool is necessarily very rough. However, of this one million not all are actively seeking teaching jobs. The National Education Association estimates that in 1978 only about 120,000 of these former teacher graduates sought teaching positions. It is unlikely that the number of former teaching graduates seeking teaching positions will decline appreciably during the projection period because of the large teacher surplus of the 1970's.

## Outlook for Teacher Supply and Demand Imbalances

It is possible to make some very rough adjustments to table 32 in order to better evaluate teacher supply and demand imbalances. The two previous sections estimated that: (1) about 40,000 new teacher graduates each year will not seek teaching positions, and (2) about 120,000 former teacher graduates in the reserve pool of teachers will seek teaching positions each year. Therefore, a rough estimate of the supply of additional teachers could be made by adding 80,000 teachers to the supply figures in table 32.

On the basis of these rough projections, the following outlook for teacher supply and demand seems to be evident: (1) under all assumptions shown in table 32, and under almost any other reasonable set of assumptions, there will continue to be a surplus of teachers through the mid 1980's; and (2) in the late 1980's, as enrollments begin climbing again, the job outlook for new teacher graduates, which has already begun improving, will vastly improve. As the job outlook for new teacher graduates improves, the percentage of bachelor's degree graduates prepared to

[6] William S. Graybeal, National Education Association, *Teacher Supply and Demand in Public Schools, 1978*, Washington, D.C., 1979.

teach will stop declining and probably begin a gradual increase. If this occurs, the supply of new teacher graduates will continue to meet a large portion of the demand for additional teachers.

# Institutions of Higher Education

Full-time and part-time instructional staff in institutions of higher education increased from 523,000 in 1968 to 809,000 in 1978. Faculty are expected to peak at 828,000 in 1981 and then drop to 759,000 in 1988 as full-time-equivalent-enrollment decreases, due to declines in the traditional college age population (figure 23).

Since only limited data on instructional staff are available, it was necessary to assume that for each type and control of institution, the ratios of full-time-equivalent-enrollment to full-time-equivalent instructional staff would remain constant at the 1976 level through 1988. The projections in table 33 and table 34 are based primarily on this assumption. In addition, it was assumed that for each type and control of institution the proportion of total instructional staff that is part-time would remain constant at 1976 levels through 1988. High and low alternative projections are based on the same assumptions, but 1976 student-staff ratios were applied to the low and high alternative full-time-equivalent-enrollment projections (tables 14-16).

Junior instructional staff increased by more than 70 percent from 95,000 in 1968 to 162,000 in 1978. Of these more than 80 percent (or 134,000) were employed as part-time junior instructors in 1978. About the same proportion as were employed on a part-time basis in 1968. In contrast, most senior instructional staff members (instructor or above) traditionally have been hired on a full-time basis. Senior staff increased about 50 percent from 428,000 in 1968 to 647,000 in 1978. There were 202,000 part-time senior instructional staff members in 1978, more than double the number in 1968. The 202,000 part-time senior staff members in 1978 make up 31 percent of total senior staff, compared to 22 percent in 1968.

The table below shows part-time senior staff as a percentage of total senior staff by type and control of institutions for 1970 and 1976[7].

| Year | Public 4-year | Private 4-year | Public 2-year | Private 2-year |
|---|---|---|---|---|
| 1970 ..... | 13 | 29 | 32 | 33 |
| 1976 ..... | 18 | 34 | 52 | 49 |

This table indicates that the practice of hiring part-time senior faculty has increased for each category of institution, and is especially prevalent at 2-year institutions, where more than half of the senior instructional staff is made up of part-time instructors or above. The projections of full-time and part-time senior staff in table 33 are based primarily on the assumption that for each type and control of institution, the proportion of part-time faculty will remain constant at 1976 levels. However, if institutions continue to hire part-time senior staff at increased rates, full-time and part-time senior instructional staff figures may turn out quite different from those shown in table 33. Projections of the full-time-equivalent senior instructional staff should not be greatly affected by continued increase in the proportion of part-time senior faculty.

## Demand for Additional Instructional Staff

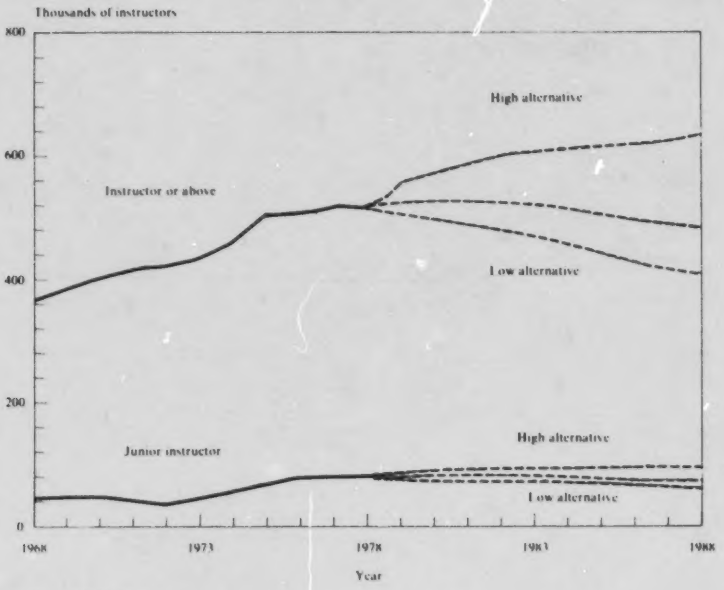
The demand for additional full-time-equivalent instructional staff in institutions of higher education was estimated at 240,000 in the 1974 to 1978 period (table 35). This demand is expected to decline for the next two 5-year periods, dropping to 138,000 in the 1979 to 1983 period and 88,000 in the 1984 to 1989 period. With student-staff ratios held constant and replacement levels projected to remain constant, the projected decreases in the demand for additional full-time-equivalent instructional staff can be attributed to the expected decreased in full-time-equivalent enrollment.

The demand for additional staff in response to enrollment changes is computed as the difference between the total number employed in successive years. Replacement requirements were estimated at 4.5 percent of previous year's number of faculty in the intermediate and low alternative and 6 percent in the high alternative.

The 6 percent replacement rate used in the high alternative is based on a 1963 U.S. Office of Education study which showed that about 5 percent of the full-time instructors or above in 4-year institutions intended to leave the profession during the following year. The 6 percent figure was arrived at by estimating an additional one percent for mortality. This is a

[7]Published and unpublished data from U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, "Employees in Institutions of Higher Education."

**Figure 23.—Full-time-equivalent instructional staff in institutions of higher education, by professional rank, with alternative projections: United States, fall 1968 to 1988**




Source: Table 34

high replacement level for a profession whose members typically have to be forced to retire at age 70. However, the 1960's was a period of great opportunity and flexibility for most professions, especially for those professions requiring a high level of education, such as the college instructional staff.

During the 1960's, college enrollment grew at phenominal rates, increasing from 3.8 million in 1960 to 8.6 million in 1970. This created a large demand for highly educated manpower, especially doctor's degree recipients. But other sectors of the economy were also in competition with colleges for this small manpower pool. As a result, instructional staff members during the 1960's had a great deal of flexibility to move from academia to government and private industry and then back to academia should they choose.

But in the 1970's conditions changed. Alternative opportunities for instructional staff members in government and private industry declined with the end of the Vietnam War and cutbacks int he Aerospace program. However, the pool of highly educated manpower had increased drastically during the 1960's. For example, the production of doctor's degrees increased from less than 11,000 in 1960-61 to more than 32,000 in 1970-71.

In the early 1970's, institutions of higher education began to foresee an end of the growth era in higher education in the late 1970's and early 1980's because of the declining birthrate, budget constraints imposed on public institutions by legislatures, and cutbacks in federal grants for research and development. They responded by reducing their hiring of instructional staff members. This occurred during a period when the supply of people seeking these jobs had increased dramatically and opportunities in other sectors of the economy were greatly reduced.

The estimated low and intermediate replacement rate projections might have been even lower than the 4.5 percent mentioned except for the following reasons: (1) with the end of the growth era in sight, institutions of higher education began denying tenure to young instructors at an increasing rate, thereby forcing them out of the profession and (2) the large number of instructional staff members hired after World War II, when enrollments in higher education began to increase rapidly, began reaching retirement age in the 1970's. Large numbers of instructional staff members who were hired in the 1950's and early 1960's also will be reaching retirement age in the 1980's.

**Table 28.—Classroom teachers in regular elementary and secondary schools, with alternative projections, by control and level of institution: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Public and nonpublic | | | Public | | | Nonpublic | | |
|---|---|---|---|---|---|---|---|---|---|
| | K-12 | Elementary | Secondary | K-12 | Elementary | Secondary | K-12 | Elementary | Secondary |
| 1968 | 2,161 | 1,223 | 938 | 1,936 | 1,076 | 860 | 225 | 147 | 78 |
| 1969 | 2,245 | 1,260 | 985 | 2,014 | 1,108 | 906 | 231[1] | 152 | 79 |
| 1970 | 2,288 | 1,281 | 1,007 | 2,055 | 1,128 | 927 | 233 | 153 | 80 |
| 1971 | 2,293 | 1,262 | 1,031 | 2,063 | 1,111[1] | 952[1] | 230[1] | 151 | 79 |
| 1972 | 2,332 | 1,291 | 1,041 | 2,103 | 1,140[1] | 963[1] | 229[1] | 151 | 78 |
| 1973 | 2,371 | 1,305 | 1,066 | 2,138 | 1,152[1] | 986[1] | 233[1] | 153 | 80 |
| 1974 | 2,404 | 1,324 | 1,080 | 2,165 | 1,167[1] | 998[1] | 239[1] | 157 | 82 |
| 1975 | 2,444 | 1,344 | 1,100 | 2,196 | 1,180[1] | 1,016[1] | 248[1] | 164 | 84 |
| 1976 | 2,449 | 1,341 | 1,108 | 2,186 | 1,166[1] | 1,020[1] | 263 | 175 | 88 |
| 1977 | 2,470 | 1,359 | 1,111 | 2,209 | 1,185[1] | 1,024[1] | 261 | 174 | 87 |
| 1978 | 2,460 | 1,352 | 1,108 | 2,199 | 1,178[1] | 1,021[1] | 261 | 174 | 87 |
| **Intermediate alternative projections[2]** | | | | | | | | | |
| 1979 | 2,437 | 1,326 | 1,112 | 2,169 | 1,147 | 1,022 | 268 | 178 | 90 |
| 1980 | 2,413 | 1,324 | 1,089 | 2,141 | 1,144 | 998 | 271 | 180 | 91 |
| 1981 | 2,386 | 1,321 | 1,065 | 2,114 | 1,139 | 975 | 272 | 182 | 90 |
| 1982 | 2,357 | 1,311 | 1,046 | 2,091 | 1,135 | 955 | 266 | 175 | 91 |
| 1983 | 2,360 | 1,327 | 1,033 | 2,084 | 1,137 | 946 | 277 | 190 | 87 |
| 1984 | 2,370 | 1,347 | 1,023 | 2,090 | 1,150 | 940 | 280 | 197 | 83 |
| 1985 | 2,393 | 1,375 | 1,018 | 2,108 | 1,175 | 933 | 285 | 200 | 85 |
| 1986 | 2,426 | 1,418 | 1,009 | 2,135 | 1,216 | 919 | 292 | 202 | 90 |
| 1987 | 2,463 | 1,469 | 994 | 2,164 | 1,264 | 901 | 298 | 205 | 93 |
| 1988 | 2,501 | 1,529 | 971 | 2,194 | 1,318 | 876 | 306 | 211 | 95 |
| **Low alternative projections[2]** | | | | | | | | | |
| 1979 | 2,413 | 1,301 | 1,112 | 2,148 | 1,126 | 1,022 | 266 | 176 | 90 |
| 1980 | 2,368 | 1,286 | 1,082 | 2,101 | 1,110 | 991 | 267 | 176 | 91 |
| 1981 | 2,322 | 1,269 | 1,053 | 2,057 | 1,094 | 963 | 265 | 175 | 90 |
| 1982 | 2,276 | 1,246 | 1,030 | 2,017 | 1,078 | 939 | 259 | 168 | 91 |
| 1983 | 2,260 | 1,248 | 1,012 | 1,993 | 1,068 | 925 | 267 | 180 | 87 |
| 1984 | 2,252 | 1,253 | 998 | 1,983 | 1,068 | 915 | 268 | 185 | 83 |
| 1985 | 2,256 | 1,266 | 989 | 1,984 | 1,080 | 904 | 272 | 187 | 85 |
| 1986 | 2,269 | 1,292 | 977 | 1,991 | 1,104 | 887 | 277 | 187 | 90 |
| 1987 | 2,284 | 1,324 | 960 | 2,001 | 1,134 | 867 | 283 | 190 | 93 |
| 1988 | 2,300 | 1,363 | 936 | 2,011 | 1,169 | 841 | 289 | 194 | 95 |
| **High alternative projections[2]** | | | | | | | | | |
| 1979 | 2,462 | 1,351 | 1,111 | 2,191 | 1,170 | 1,021 | 271 | 181 | 90 |
| 1980 | 2,459 | 1,365 | 1,095 | 2,183 | 1,180 | 1,004 | 276 | 185 | 91 |
| 1981 | 2,454 | 1,377 | 1,077 | 2,175 | 1,189 | 987 | 278 | 188 | 90 |
| 1982 | 2,446 | 1,383 | 1,064 | 2,172 | 1,199 | 973 | 275 | 184 | 91 |
| 1983 | 2,472 | 1,416 | 1,056 | 2,184 | 1,216 | 969 | 287 | 200 | 87 |
| 1984 | 2,505 | 1,455 | 1,050 | 2,212 | 1,245 | 967 | 293 | 210 | 83 |
| 1985 | 2,552 | 1,504 | 1,048 | 2,253 | 1,290 | 963 | 299 | 214 | 85 |
| 1986 | 2,613 | 1,571 | 1,042 | 2,305 | 1,353 | 952 | 308 | 218 | 90 |
| 1987 | 2,680 | 1,650 | 1,030 | 2,363 | 1,426 | 937 | 317 | 224 | 93 |
| 1988 | 2,751 | 1,741 | 1,009 | 2,424 | 1,510 | 914 | 327 | 232 | 95 |

[1]Estimated.

[2]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Statistics of Public Elementary and Secondary Day Schools*, (2) Bulletin: *Selected Public and Private Elementary and Secondary Education Statistics*, October 23, 1979, and (3) *Statistics of Nonpublic Elementary and Secondary Schools*.

**Table 29.—Pupil-teacher ratios in regular elementary and secondary schools, with alternative projections, by control and level of institution: United States, fall 1968 to 1988[1]**

| Year (fall) | Public | | Nonpublic | |
|---|---|---|---|---|
| | Elementary | Secondary | Elementary | Secondary |
| 1968 | 25.4 | 20.4 | 29.8 | 17.3 |
| 1969 | 24.8 | 20.0 | 27.8[2] | 16.9[2] |
| 1970 | 24.4 | 19.8 | 26.5 | 16.4 |
| 1971 | 24.9 | 19.3 | 25.5[2] | 16.4[2] |
| 1972 | 24.0 | 19.1 | 24.6[2] | 16.4[2] |
| 1973 | 22.9 | 19.3 | 23.6[2] | 16.4[2] |
| 1974 | 22.6 | 18.7 | 22.7[2] | 16.4[2] |
| 1975 | 21.7 | 18.8 | 21.7[2] | 16.4[2] |
| 1976 | 21.8 | 18.5 | 20.8 | 16.4 |
| 1977 | 21.1 | 18.2 | 20.5 | 16.4 |
| 1978 | 21.3 | 17.2 | 20.4 | 16.5 |
| | **Intermediate alternative projections[3]** | | | |
| 1979 | 20.9 | 17.2 | 20.1 | 16.4 |
| 1980 | 20.7 | 17.1 | 19.9 | 16.4 |
| 1981 | 20.5 | 17.0 | 19.7 | 16.4 |
| 1982 | 20.2 | 16.9 | 19.5 | 16.4 |
| 1983 | 20.0 | 16.8 | 19.4 | 16.4 |
| 1984 | 19.8 | 16.7 | 19.2 | 16.4 |
| 1985 | 19.6 | 16.7 | 19.1 | 16.4 |
| 1986 | 19.3 | 16.6 | 19.0 | 16.4 |
| 1987 | 19.1 | 16.6 | 18.9 | 16.4 |
| 1988 | 18.9 | 16.5 | 18.8 | 16.4 |
| | **Low alternative projections[3]** | | | |
| 1979 | 20.5 | 17.2 | 19.8 | 16.4 |
| 1980 | 20.0 | 17.0 | 19.4 | 16.4 |
| 1981 | 19.6 | 16.8 | 19.0 | 16.4 |
| 1982 | 19.2 | 16.6 | 18.6 | 16.4 |
| 1983 | 18.7 | 16.4 | 18.3 | 16.4 |
| 1984 | 18.3 | 16.3 | 18.0 | 16.4 |
| 1985 | 17.8 | 16.1 | 17.8 | 16.4 |
| 1986 | 17.4 | 16.0 | 17.5 | 16.4 |
| 1987 | 16.9 | 15.9 | 17.3 | 16.4 |
| 1988 | 16.5 | 15.8 | 17.1 | 16.4 |
| | **High alternative projections[3]** | | | |
| 1979 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1980 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1981 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1982 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1983 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1984 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1985 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1986 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1987 | 21.3 | 17.2 | 20.4 | 16.4 |
| 1988 | 21.3 | 17.2 | 20.4 | 16.4 |

[1]Decreasing pupil-teacher ratios do not imply decreasing class sizes, since many additional teachers have been hired to meet the special needs of students. The teaching of special students typically requires small pupil-teacher ratios, resulting in nominal decreases in overall class size.

[2]Estimated.

[3]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Statistics of Public Elementary and Secondary Day Schools*, (2) Bulletin: *Selected Public and Private Elementary and Secondary Education Statistics*, October 23, 1979, and (3) *Statistics of Nonpublic Elementary and Secondary Schools*.

**Table 30.—Estimated demand for classroom teachers in regular public elementary and secondary schools, with alternative projections: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total teacher demand | Demand for additional certificated teachers[1] | | | |
|---|---|---|---|---|---|
| | | Total | For enrollment change | For pupil-teacher ratio change | For teacher turnover |
| 1968 | 1,936 | ... | ... | ... | ... |
| 1969 | 2,014 | 233 | 35 | 43 | 155 |
| 1970 | 2,055 | 192 | 15 | 26 | 151 |
| 1971 | 2,063 | 152 | 9 | -1 | 144 |
| 1972 | 2,103 | 174 | -12 | 52 | 134 |
| 1973 | 2,138 | 161 | -7 | 42 | 126 |
| 1969-1973 | ... | 912 | 40 | 162 | 710 |
| 1974 | 2,165 | 155 | -19 | 46 | 128 |
| 1975 | 2,196 | 162 | -6 | 38 | 130 |
| 1976 | 2,186 | 122 | -19 | 9 | 132 |
| 1977 | 2,209 | 154 | -34 | 57 | 131 |
| 1978 | 2,199 | 123 | -57 | 47 | 133 |
| 1974-1978 | ... | 716 | -135 | 197 | 654 |
| **Intermediate alternative projections** | | | | | |
| 1979 | 2,169 | 102 | -51 | 21 | 132 |
| 1980 | 2,141 | 103 | -47 | 20 | 130 |
| 1981 | 2,114 | 100 | -48 | 20 | 128 |
| 1982 | 2,091 | 103 | -44 | 20 | 127 |
| 1983 | 2,084 | 118 | -22 | 15 | 125 |
| 1979-1983 | ... | 526 | -212 | 96 | 642 |
| 1984 | 2,090 | 132 | -8 | 15 | 125 |
| 1985 | 2,108 | 143 | 1 | 17 | 125 |
| 1986 | 2,135 | 153 | 6 | 21 | 126 |
| 1987 | 2,164 | 158 | 16 | 14 | 128 |
| 1988 | 2,194 | 159 | 11 | 18 | 130 |
| 1984-1988 | ... | 745 | 26 | 85 | 634 |
| **Low alternative projections** | | | | | |
| 1979 | 2,169 | 91 | -51 | 21 | 121 |
| 1980 | 2,141 | 81 | -47 | 20 | 108 |
| 1981 | 2,114 | 75 | -48 | 20 | 103 |
| 1982 | 2,091 | 77 | -44 | 20 | 101 |
| 1983 | 2,084 | 93 | -22 | 15 | 100 |
| 1979-1983 | ... | 417 | -212 | 96 | 533 |
| 1984 | 2,090 | 107 | -8 | 15 | 100 |
| 1985 | 2,108 | 118 | 1 | 17 | 100 |
| 1986 | 2,135 | 128 | 6 | 21 | 101 |
| 1987 | 2,164 | 132 | 16 | 14 | 102 |
| 1988 | 2,194 | 133 | 11 | 18 | 104 |
| 1984-1988 | ... | 615 | 26 | 85 | 507 |
| **High alternative projections** | | | | | |
| 1979 | 2,169 | 113 | -51 | 21 | 143 |
| 1980 | 2,141 | 125 | -47 | 20 | 152 |
| 1981 | 2,114 | 133 | -48 | 20 | 161 |
| 1982 | 2,091 | 145 | -44 | 20 | 169 |
| 1983 | 2,084 | 160 | -22 | 15 | 167 |
| 1979-1983 | ... | 676 | -212 | 96 | 792 |
| 1984 | 2,090 | 174 | -8 | 15 | 167 |
| 1985 | 2,108 | 185 | 1 | 17 | 167 |
| 1986 | 2,135 | 196 | 6 | 21 | 169 |
| 1987 | 2,164 | 201 | 16 | 14 | 171 |
| 1988 | 2,194 | 202 | 11 | 18 | 173 |
| 1984-1988 | ... | 958 | 26 | 85 | 847 |

[1]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication: *Statistics of Public Elementary and Secondary Day Schools.*

**Table 31.—Estimated demand for classroom teachers in regular nonpublic elementary and secondary schools, with projections: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total teacher demand | Demand for additional teachers[1] | | | |
|---|---|---|---|---|---|
| | | Total | For enrollment changes | For pupil-teacher ratio changes | For teacher turnover |
| 1968 | 225 | ... | ... | ... | ... |
| 1969 | 231 | 20 | -6 | 12 | 14 |
| 1970 | 233 | 16 | -8 | 10 | 14 |
| 1971 | 230 | 11 | -9 | 6 | 14 |
| 1972 | 229 | 13 | -6 | 5 | 14 |
| 1973 | 233 | 18 | -2 | 6 | 14 |
| 1969-1973 | ... | 78 | -31 | 39 | 70 |
| 1974 | 239 | 20 | 0 | 6 | 14 |
| 1975 | 248 | 23 | 2 | 7 | 14 |
| 1976 | 263 | 30 | 8 | 7 | 15 |
| 1977 | 261 | 14 | -5 | 3 | 16 |
| 1978 | 261 | 16 | 0 | 0 | 16 |
| 1974-1978 | ... | 103 | 5 | 23 | 75 |
| | | Projected | | | |
| 1979 | 268 | 23 | 4 | 3 | 16 |
| 1980 | 271 | 19 | 1 | 2 | 16 |
| 1981 | 272 | 17 | 0 | 1 | 16 |
| 1982 | 266 | 10 | -8 | 2 | 16 |
| 1983 | 277 | 27 | 9 | 2 | 16 |
| 1979-1983 | ... | 96 | 6 | 10 | 80 |
| 1984 | 280 | 20 | 1 | 2 | 17 |
| 1985 | 285 | 22 | 4 | 1 | 17 |
| 1986 | 292 | 24 | 6 | 1 | 17 |
| 1987 | 298 | 24 | 5 | 1 | 18 |
| 1988 | 306 | 26 | 7 | 1 | 18 |
| 1984-1988 | ... | 116 | 23 | 6 | 87 |

[1]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) Bulletin: *Selected Public and Private Elementary and Secondary Education Statistics*, October 23, 1979, and (2) *Statistics of Nonpublic Elementary and Secondary Schools*.

**Table 32.—Estimated supply of new teacher graduates compared to estimated total demand for additional teachers in regular elementary and secondary schools, with alternative projections: United States, fall 1969 to 1988[1]**

**(In thousands)**

| Year (fall) | Estimated supply of new teacher graduates | Estimated total demand for additional teachers | Supply of new teacher graduates as a percentage of the total demand for additional teachers |
|---|---|---|---|
| 1969 | 264 | 253 | 104.3 |
| 1970 | 284 | 208 | 136.5 |
| 1971 | 314 | 163 | 192.6 |
| 1972 | 317 | 187 | 169.5 |
| 1973 | 313 | 179 | 174.9 |
| 1969-1973 | 1,492 | 990 | 150.7 |
| 1974 | 279 | 175 | 159.4 |
| 1975 | 238 | 185 | 128.6 |
| 1976 | 227 | 152 | 149.3 |
| 1977 | 198 | 168 | 117.9 |
| 1978 | 190 | 139 | 136.7 |
| 1974-1978 | 1,132 | 819 | 138.2 |
| **Intermediate alternative projections** | | | |
| 1979 | 184 | 125 | 147.2 |
| 1980 | 183 | 122 | 150.0 |
| 1981 | 178 | 117 | 152.1 |
| 1982 | 177 | 113 | 156.6 |
| 1983 | 171 | 145 | 117.9 |
| 1979-1983 | 893 | 622 | 143.6 |
| 1984 | 166 | 152 | 109.2 |
| 1985 | 159 | 165 | 96.4 |
| 1986 | 156 | 177 | 88.1 |
| 1987 | 150 | 182 | 82.4 |
| 1988 | 149 | 185 | 80.5 |
| 1984-1988 | 780 | 861 | 90.6 |
| **Low alternative supply projections-high alternative demand projections** | | | |
| 1979 | 184 | 136 | 135.3 |
| 1980 | 175 | 144 | 121.5 |
| 1981 | 166 | 150 | 110.7 |
| 1982 | 160 | 155 | 103.2 |
| 1983 | 151 | 187 | 80.8 |
| 1979-1983 | 836 | 772 | 108.3 |
| 1984 | 143 | 194 | 73.7 |
| 1985 | 134 | 207 | 64.7 |
| 1986 | 129 | 220 | 58.6 |
| 1987 | 122 | 225 | 54.2 |
| 1988 | 118 | 228 | 51.8 |
| 1984-1988 | 646 | 1,074 | 60.2 |
| **High alternative supply projections-low alternative demand projections** | | | |
| 1979 | 184 | 114 | 161.4 |
| 1980 | 190 | 100 | 190.0 |
| 1981 | 190 | 92 | 206.5 |
| 1982 | 193 | 87 | 221.8 |
| 1983 | 191 | 120 | 159.2 |
| 1979-1983 | 948 | 513 | 184.8 |
| 1984 | 188 | 127 | 148.0 |
| 1985 | 184 | 140 | 131.4 |
| 1986 | 184 | 152 | 121.0 |
| 1987 | 179 | 156 | 114.7 |
| 1988 | 180 | 159 | 113.2 |
| 1984-1988 | 915 | 734 | 124.7 |

[1]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add totals to and numbers for past years may differ slightly from previously published numbers.

SOURCES: National Education Association publication: *Teacher Supply and Demand in Public Schools* 1973, 1976, 1977, and 1978.

**Table 33—Full-time and part-time instructional staff in all institutions of higher education, with alternative projections, by professional rank: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Total | Instructor or above | | | Junior instructor | | |
|---|---|---|---|---|---|---|---|
| | | Total | Full-time | Part-time | Total | Full-time | Part-time |
| 1968[1] | 523 | 428 | 332 | 96 | 95 | 15 | 80 |
| 1969[1] | 546 | 450 | 350 | 100 | 97 | 15 | 82 |
| 1970 | 573 | 474 | 369 | 104 | 101 | 14 | 87 |
| 1971[1] | 590 | 492 | 379 | 113 | 97 | 10 | 88 |
| 1972 | 590 | 500 | 380 | 120 | 90 | 6 | 84 |
| 1973[1] | 634 | 527 | 389 | 138 | 107 | 13 | 94 |
| 1974[1] | 695 | 567 | 406 | 161 | 128 | 17 | 111 |
| 1975[1] | 781 | 628 | 440 | 188 | 153 | 22 | 131 |
| 1976 | 793 | 633 | 434 | 199 | 160 | 28 | 132 |
| 1977[1] | 812 | 650 | 447 | 203 | 162 | 28 | 134 |
| 1978[1] | 809 | 647 | 445 | 202 | 162 | 29 | 134 |
| **Intermediate alternative projections[2]** | | | | | | | |
| 1979 | 822 | 659 | 451 | 207 | 163 | 29 | 134 |
| 1980 | 826 | 663 | 453 | 209 | 163 | 29 | 134 |
| 1981 | 828 | 665 | 454 | 211 | 163 | 29 | 134 |
| 1982 | 824 | 662 | 452 | 210 | 162 | 29 | 132 |
| 1983 | 816 | 656 | 447 | 209 | 160 | 28 | 132 |
| 1984 | 803 | 646 | 440 | 206 | 157 | 28 | 129 |
| 1985 | 789 | 635 | 432 | 203 | 154 | 27 | 127 |
| 1986 | 775 | 624 | 424 | 200 | 151 | 27 | 124 |
| 1987 | 765 | 616 | 419 | 198 | 148 | 26 | 122 |
| 1988 | 759 | 612 | 416 | 197 | 147 | 26 | 121 |
| **Low alternative projections[2]** | | | | | | | |
| 1979 | 792 | 635 | 435 | 200 | 157 | 28 | 129 |
| 1980 | 781 | 627 | 429 | 198 | 154 | 27 | 127 |
| 1981 | 770 | 619 | 422 | 196 | 151 | 27 | 124 |
| 1982 | 754 | 606 | 413 | 193 | 148 | 26 | 122 |
| 1983 | 735 | 592 | 403 | 189 | 144 | 25 | 118 |
| 1984 | 713 | 574 | 391 | 184 | 139 | 25 | 114 |
| 1985 | 692 | 557 | 379 | 178 | 134 | 24 | 111 |
| 1986 | 671 | 541 | 367 | 174 | 130 | 23 | 107 |
| 1987 | 654 | 528 | 358 | 170 | 126 | 22 | 104 |
| 1988 | 643 | 519 | 351 | 167 | 124 | 22 | 102 |
| **High alternative projections[2]** | | | | | | | |
| 1979 | 870 | 697 | 478 | 220 | 172 | 30 | 142 |
| 1980 | 894 | 717 | 491 | 227 | 176 | 31 | 145 |
| 1981 | 918 | 737 | 504 | 234 | 181 | 32 | 149 |
| 1982 | 935 | 752 | 513 | 239 | 183 | 32 | 151 |
| 1983 | 949 | 763 | 520 | 243 | 186 | 33 | 153 |
| 1984 | 957 | 770 | 524 | 246 | 187 | 33 | 154 |
| 1985 | 962 | 775 | 527 | 248 | 187 | 33 | 154 |
| 1986 | 967 | 779 | 530 | 250 | 188 | 33 | 154 |
| 1987 | 976 | 787 | 534 | 253 | 189 | 34 | 155 |
| 1988 | 990 | 798 | 542 | 257 | 191 | 34 | 157 |

[1]Estimated. See appendix C, "Estimation Methods."

[2]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and details for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Employees in Institutions of Higher Education.*

**Table 34.—Full-time-equivalent instructional staff in all institutions of higher education, with alternative projections, by professional rank: United States, fall 1968 to 1988**

**(In thousands)**

| Year (fall) | Estimated total full-time-equivalent | Instructor or above | | | Junior instructor | | |
|---|---|---|---|---|---|---|---|
| | | Total | Full-time | Full-time equivalent of part-time | Total | Full-time | Full-time equivalent of part-time |
| 1968[1] | 412 | 364 | 332 | 32 | 48 | 15 | 33 |
| 1969[1] | 430 | 383 | 350 | 33 | 49 | 15 | 33 |
| 1970 | 451 | 402 | 369 | 33 | 50 | 14 | 36 |
| 1971[1] | 458 | 414 | 379 | 35 | 44 | 10 | 34 |
| 1972 | 455 | 417 | 380 | 37 | 38 | 6 | 32 |
| 1973[1] | 481 | 433 | 389 | 44 | 48 | 13 | 35 |
| 1974[1] | 516 | 457 | 406 | 51 | 59 | 17 | 42 |
| 1975[1] | 574 | 501 | 440 | 61 | 73 | 22 | 51 |
| 1976 | 584 | 501 | 434 | 66 | 83 | 28 | 55 |
| 1977[1] | 599 | 514 | 447 | 68 | 84 | 29 | 56 |
| 1978[1] | 597 | 513 | 445 | 68 | 84 | 29 | 56 |
| **Intermediate alternative projections[2]** | | | | | | | |
| 1979 | 605 | 521 | 451 | 69 | 84 | 29 | 56 |
| 1980 | 608 | 523 | 453 | 70 | 85 | 29 | 56 |
| 1981 | 609 | 524 | 454 | 70 | 85 | 29 | 56 |
| 1982 | 606 | 522 | 452 | 70 | 84 | 29 | 55 |
| 1983 | 600 | 517 | 447 | 70 | 83 | 28 | 55 |
| 1984 | 590 | 509 | 440 | 69 | 82 | 28 | 54 |
| 1985 | 580 | 500 | 432 | 67 | 80 | 27 | 53 |
| 1986 | 569 | 491 | 424 | 66 | 78 | 27 | 52 |
| 1987 | 561 | 484 | 419 | 66 | 77 | 26 | 51 |
| 1988 | 557 | 481 | 416 | 65 | 76 | 26 | 50 |
| **Low alternative projections[2]** | | | | | | | |
| 1979 | 583 | 502 | 435 | 67 | 81 | 28 | 54 |
| 1980 | 575 | 495 | 429 | 66 | 80 | 27 | 53 |
| 1981 | 566 | 488 | 422 | 65 | 79 | 27 | 52 |
| 1982 | 554 | 478 | 413 | 64 | 77 | 26 | 51 |
| 1983 | 540 | 466 | 403 | 63 | 73 | 25 | 49 |
| 1984 | 524 | 452 | 391 | 61 | 72 | 25 | 48 |
| 1985 | 508 | 438 | 379 | 59 | 70 | 24 | 46 |
| 1986 | 492 | 425 | 367 | 58 | 68 | 23 | 44 |
| 1987 | 480 | 414 | 358 | 56 | 66 | 22 | 43 |
| 1988 | 471 | 407 | 351 | 56 | 64 | 22 | 42 |
| **High alternative projections[2]** | | | | | | | |
| 1979 | 640 | 551 | 478 | 73 | 89 | 30 | 59 |
| 1980 | 658 | 566 | 491 | 76 | 92 | 31 | 60 |
| 1981 | 675 | 582 | 504 | 78 | 94 | 32 | 62 |
| 1982 | 688 | 593 | 513 | 80 | 95 | 32 | 63 |
| 1983 | 698 | 601 | 520 | 81 | 96 | 33 | 64 |
| 1984 | 703 | 606 | 524 | 82 | 97 | 33 | 64 |
| 1985 | 707 | 610 | 527 | 82 | 97 | 33 | 64 |
| 1986 | 710 | 613 | 530 | 83 | 98 | 33 | 64 |
| 1987 | 716 | 618 | 534 | 84 | 98 | 34 | 65 |
| 1988 | 726 | 627 | 542 | 85 | 99 | 34 | 65 |

[1]Estimated. See appendix C, "Estimation Methods."

[2]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Employees in Institutions of Higher Education.*

**Table 35.—Estimated demand for full-time-equivalent instructional staff in institutions of higher education, with alternative projections: United States, fall 1973 to 1988**

**(In thousands)**

| Year (fall) | Full-time-equivalent instructional staff | Additional full-time-equivalent instructional staff needed[1] | | |
|---|---|---|---|---|
| | | Total | For enrollment and student-staff ratio changes | For replacement |
| 1973 | 481 | ... | ... | ... |
| 1974 | 516 | 57 | 35 | 22 |
| 1975 | 574 | 81 | 58 | 23 |
| 1976 | 584 | 36 | 10 | 26 |
| 1977 | 599 | 41 | 15 | 26 |
| 1978 | 597 | 25 | -2 | 27 |
| 1974-1978 | ... | 240 | 116 | 124 |
| | | **Intermediate alternative projections** | | |
| 1979 | 605 | 35 | 8 | 27 |
| 1980 | 608 | 30 | 3 | 27 |
| 1981 | 609 | 28 | 1 | 27 |
| 1982 | 606 | 24 | -3 | 27 |
| 1983 | 600 | 21 | -6 | 27 |
| 1979-1983 | ... | 138 | 3 | 135 |
| 1984 | 590 | 17 | -10 | 27 |
| 1985 | 580 | 17 | -10 | 27 |
| 1986 | 569 | 15 | -11 | 26 |
| 1987 | 561 | 18 | -8 | 26 |
| 1988 | 557 | 21 | -4 | 25 |
| 1984-1988 | ... | 88 | -43 | 131 |
| | | **Low alternative projections** | | |
| 1979 | 583 | 13 | -14 | 27 |
| 1980 | 575 | 18 | -8 | 26 |
| 1981 | 566 | 17 | -9 | 26 |
| 1982 | 554 | 17 | -8 | 25 |
| 1983 | 540 | 11 | -14 | 25 |
| 1979-1983 | ... | 76 | -53 | 129 |
| 1984 | 524 | 8 | -16 | 24 |
| 1985 | 508 | 8 | -16 | 24 |
| 1986 | 492 | 7 | -16 | 23 |
| 1987 | 480 | 10 | -12 | 22 |
| 1988 | 471 | 13 | -9 | 22 |
| 1984-1988 | ... | 46 | -69 | 115 |
| | | **High alternative projections** | | |
| 1979 | 640 | 79 | 43 | 36 |
| 1980 | 658 | 56 | 18 | 38 |
| 1981 | 675 | 56 | 17 | 39 |
| 1982 | 688 | 54 | 13 | 41 |
| 1983 | 698 | 51 | 10 | 41 |
| 1979-1983 | ... | 296 | 101 | 195 |
| 1984 | 703 | 47 | 5 | 42 |
| 1985 | 707 | 46 | 4 | 42 |
| 1986 | 710 | 45 | 3 | 42 |
| 1987 | 716 | 49 | 6 | 43 |
| 1988 | 726 | 53 | 10 | 43 |
| 1984-1988 | ... | 240 | 28 | 212 |

[1]For methodological details, see appendix A, section A-3. For primary assumptions made, see appendix B, table B-3.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals and numbers for past years may differ slightly from previously published numbers.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Employees in Institutions of Higher Education.*

# Chapter IV

# EXPENDITURES OF EDUCATION INSTITUTIONS

## Statistical Universe

The tables in this chapter pertain only to expenditures of regular public and nonpublic elementary and secondary schools and institutions of higher education in the 50 States and the District of Columbia. Data on "other" institutions are not included except for the reference to "other" schools in the following discussion and in table 36.

"Other" institutions include elementary and secondary residential schools for exceptional children (public and nonpublic), Federal schools for Indians (public), and federally operated elementary and secondary schools on military posts (public). In 1977-78, estimated expenditures were about $400 million for public and $100 million for nonpublic "other" schools. Almost all other schools, including the nonpublic, were non-profitmaking institutions.

Regular institutions include public and most nonprofit, nonpublic elementary and secondary schools (kindergarten through grade 12) plus the institutions of higher education offering degree-credit courses and a small number of technical and professional schools. Most of these schools and colleges are oriented toward regular academic programs, but some are primarily technical training institutions and some offer both academic and vocational courses.

## Expenditures By Source of Funds

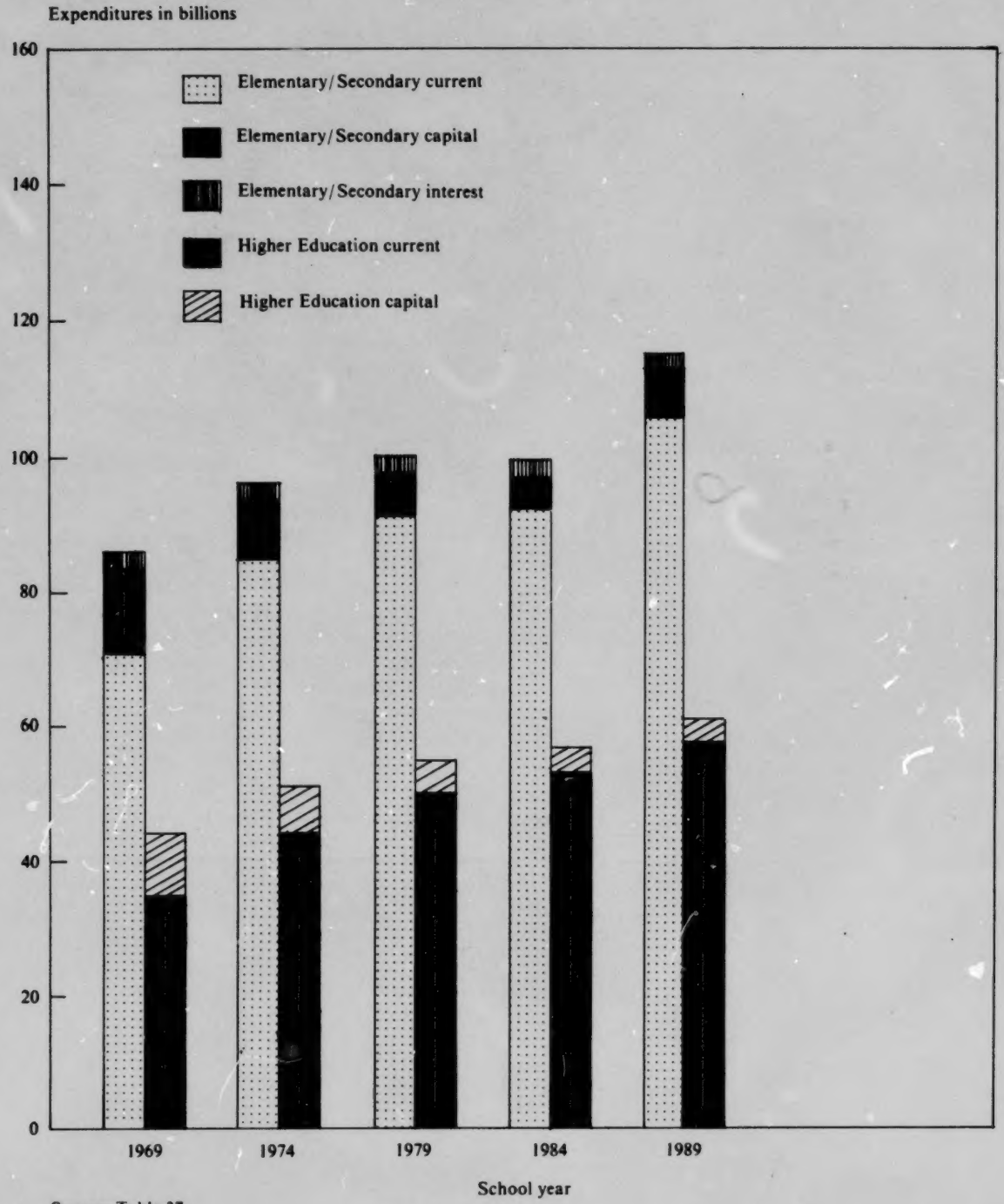
Total expenditures are defined as the expenditure of all money from both loans and grants for capital outlay, current expenditures and interest and exclude only the funds used for reducing debt and transfers that result in duplication. Expenditures from Federal, State, and local sources are defined as institutional expenditures of all grants (but not loans) received from these sources. Expenditures from all other sources include all funds received by the institutions that were not received as grants from Federal, State and local governments. Loans to institutions of higher education from any source are included under "all other."

## Total Expenditures[1]

Total annual expenditures of regular educational institutions (in 1978-79 dollars) increased from $128.8 billion in 1968-69 to $152.4 billion in 1977-78 and are projected to reach $175.3 billion in 1988-89 (table 37 and figure 24). This increase in total expenditures reflects a trend of increasing expenditure per student resulting from an increase in resource use per student as well as an increase in the cost of these resources.

[1]Assistance in the estimation of the model for elementary and secondary school current, capital and interest expenditures was provided by Lawrence Olson of Data Resources, Inc.. Historical data and projections of all economic variables used in the expenditures model referred to in this publication were obtained from the U.S Macroeconomic Model of Data Resources, Inc.

**Figure 24.—Expenditures (in 1978-79 dollars) by regular educational institutions, by type: United States, 1969-1989**




Source: Table 37.

## Regular Public Elementary and Secondary Schools

### Current Expenditures

For regular public elementary and secondary schools, projections of current expenditures are obtained by applying projections of current expenditures per pupil in average daily attendance (CE/ADA), in constant dollars, to projections of average daily attendance (92 percent of projected enrollment).

No attempt is made to project current expenditures in nonpublic elementary and secondary schools because expenditure data are not available. Instead, *Projections* presents estimates and projections of what the current expenditures in constant dollars would be to educate the nonpublic students at the CE/ADA for public schools and the pupil-teacher ratios of nonpublic schools.

Annual current expenditures for public elementary and secondary schools (in 1978-79 dollars) increased from $62.9 billion in 1968-69 to $80.0 billion in 1977-78, an increase of 27.2 percent (table 37), and are expected to increase by 15.6 percent to $92.5 billion by 1988-89.

Increases in current expenditures are due to past enrollment increases, together with increases in expenditures per pupil. CE/ADA is projected as a function of ADA and total State and local government expenditures per ADA. Total State and local government expenditures are projected to continue increasing throughout the 1980's, while ADA is expected to fall through 1984-85 and then increase through 1989-90. As a result, current expenditures are projected to decrease in 1979-80 through 1981-82 and then begin to increase in 1982-83.

The projected increase in CE/ADA reflects both the increase in costs of inputs used in the education process and the increase in resources used per student. A large portion of current expenditures goes to salaries of teachers. The pupil/teacher ratio has decreased from 25.4 and 20.4 in elementary and secondary schools, respectively, in 1968-69 to 21.1 and 18.2 in 1977-78 and is expected to reach 18.9 and 16.5 by 1988-89. At the same time, the average annual salary of classroom teachers, in constant 1978-79 dollars, has gone from $15,885 in 1968-69 to $16,441 in 1977-78 and is expected to decline to $15,160 in 1980-81 before beginning to increase again (table 40). The expected drop in salaries of teachers from 1978-79 through 1980-81 coincides with an expected continuing decrease in enrollment and a growing surplus of teachers, while the rise in salaries throughout the rest of the 1980's coincides with increasing enrollments and a decreasing teacher surplus. The combined effect of changes in pupil/teacher ratios and average classroom teacher salary has been one of increasing the per pupil teacher expenditures. In addition, it is expected that increases in energy costs will be greater than the general rise in prices in the 1980's and will result in higher per pupil expenditures on transportation and plant maintenance and operation. At the same time, various fixed charges such as retirement funding, Social Security and unemployment compensation have increased (and are expected to continue increasing) per pupil expenditures without changing in real resource input. The relatively low capital/labor ratio which exists in the education industry makes productivity increases difficult to achieve and, therefore, suggests a continuing increase in per pupil expenditure.

### Capital Outlay

Capital outlay (in 1978-79 dollars) by regular public elementary and secondary schools, including the expenditures of State and local school building authorities, was $46.8 billion for the five year period 1968-69 through 1972-73, and $34.9 billion for the following 5-year period 1973-74 through 1977-78 (table 41). It is expected to decrease to $27.2 billion for 1978-79 through 1982-83 and to rise slightly to $27.4 billion for 1983-84 through 1987-88.

The decrease in capital outlay reflects the initial slowdown in the growth of ADA followed by the absolute decline in ADA. It should be noted that not all capital outlay represents contruction. It was estimated that in 1973-74, 16 percent of capital outlay was for equipment and 84 percent for land and buildings.

A sharp decrease is expected in the number of classrooms to be completed because of enrollment changes; however, school buildings will continue to be built for other reasons, including (1) replacement, (2) migration factors (including school district reorganization), and (3) reduction in the number of crowded and unsatisfactory r[illegible]

Capital outlay per student was projected as a function of ADA, directional changes in ADA and new public construction put-in-place by all levels of government. A decline in ADA between the current and previous year is estimated to reduce capital outlay by about 14 percent, while a decline one year earlier decreases spending by about 8 percent. The capital outlay projection equation derives from the

tendency of capital spending to occur in growth periods and decline during periods of declining growth.

**Interest expenditures**

Annual expenditures (in 1978-79 dollars) for interest by public elementary and secondary schools increased from $2.1 billion in 1968-69 to $2.5 billion in 1972-73 and then decreased to $2.1 billion in 1977-78. They are expected to continue decreasing to $2.0 billion in 1979-80 before leveling off at that figure throughout the projection range. While capital outlay is falling through a large part of this period, interest expenditures are projected to level off rather than fall because interest expenditures continue 20 years or more after construction resulting in debt being incurred at a greater rate than it is being eliminated. Total interest expenditure was projected as a function of ADA, State and local government obligations outstanding, and the yield on AAA State and local government bonds (general obligations).

## Nonpublic Elementary and Secondary Schools

It is impossible to compare expentiture data for nonpublic elementary and secondary schools with that for public schools since nonpublic schools rely on donated services for a substantial portion of their resources. This is especially true in the elementary and secondary schools operated by religious groups. In 1976-77, over 62 percent of the almost 211,000 nonpublic school teachers worked in schools affiliated with the Roman Catholic Church, where many of the teachers belong to religious orders and donated part or all of their services.

Although it is difficult to arrive at national estimates of nonpublic school expenditures that everyone will accept, the substantial contribution of nonpublic elementary and secondary schools cannot be ignored when total expenditures for education are being considered. Therefore, illustrative estimates of nonpublic elementary and secondary school expenditures were developed and are shown in table 37. They are based on the assumption that the cost per teacher (including donated facilities and services) in nonpublic schools is the same as in the public schools. For specific methodology, see appendix A, section 4.

## Institutions of Higher Education

**Total expenditures**

Annual total expenditures (excluding transfers and including current and capital expenditures) of institutions of higher education (in 1978-79 dollars) increased from $44.0 billion in 1968-69 to $54.2 billion in 1977-78 and are projected to reach $60.7 billion by 1988-89. From 1968-69 to 1977-78, full-time-equivalent-enrollment (FTE) increased by 41.3 percent, while the increase in total expenditures was 23.2 percent. FTE enrollment is expected to decrease by 5.3 percent from 1977-78 to 1988-89, while total expenditures are expected to continue to increase by 12.0 percent.

*Current Expenditures*

Annual current expenditures (excluding transfers) of institutions of higher education (in 1978-79 dollars) increased from $34.4 billion in 1968-69 to $49.1 billion in 1977-78 and are expected to increase to $57.6 billion by 1988-89 (tables 37 and 43).

The percent increase in current expenditures was 42.5 percent from 1968-69 to 1977-78 and 17.3 percent from 1977-78 to 1988-89. In general, current expenditures on education are a function of the level of enrollment and the type of student enrolled as well as a function of other variables. However, higher education institutions play a triple role in providing not only education but also research and public services for and to the community. Nonstudent education expenditures seem to bear only a casual relationship to the level of enrollment. It is misleading, therefore, to attribute the continuing rise in current expenditures to increases in the cost of education alone. For this reason, current expenditures projections are obtained by projecting the components of current expenditures and then summing these projected components to reach a projected figure for total current expenditures. Each component is projected as a function of enrollment variable (s) and/or a variable or variables reflecting the economic environment in which the institutions receive and spend money. Personal income per capita is the most frequently used economic variable.

*Capital Outlay*

Annual capital outlay of institutions of higher education (in 1978-79 dollars) declined from $9.6 billion in 1968-69 to $5.1 billion in 1977-78 and is expected to continue to decline to $3.1 billion in 1988-89 (table 45). This decline reflects the decline in the rate of increase of full-time-equivalent-enrollment (FTE) during the late 1960's and early 1970's as well as the projected absolute decline in FTE enrollment from 1976-77 through the 1980's.

## Public Institutions of Higher Education

### Total Expenditures

Annual total expenditures (excluding transfers and including current and capital expenditures) of public institutions of higher education (in 1978-79 dollars) increased from $28.2 billion in 1968-69 to $36.5 billion in 1977-78 and are expected to reach $41.7 billion in 1988-89. These figures represent a 40.2 percent increase from 1968-69 to 1977-78 and a 13.9 percent increase from 1977-78 to 1988-89. From 1968-69 to 1977-78, the increase in expenditures was in line with the increase in FTE. However, the expected increase in expenditures from 1977-78 to 1988-89 contrasts with an expected decline of 4.6 percent in FTE enrollment. This might appear anomalous at first, but this continued increase in expenditures reflects not only changes in FTE enrollment, but also increases in resources used to educate each student combined with increases in the relative cost of these resources. In addition, some categories of expenditures such as hospital expenditures are increasing, and are expected to continue increasing, yet these expenditures are only peripherally related to the level of enrollment.

*Current Expenditures*

Annual current expenditures (excluding transfers) of public institutions of higher education (in 1978-79 dollars) increased from $21.2 billion in 1968-69 to $32.8 billion in 1977-78 and are projected to reach $39.8 billion in 1988-89 (figure 25). The major component of current expenditures is expenditure on student education which went from $13.4 billion (63.2 percent of current expenditures) in 1968-69 to $22.0 billion (67.1 percent of current expenditures) in 1977-78 and is projected to reach $26.8 billion (67.3 percent of current expenditures in the intermediate alternative projections) in 1988-89. For the intermediate alternative projections, total current expenditures on student education were projected as a function of public FTE enrollment and personal income per capita lagged one year. For the low alternative projections, current expenditure per FTE student was projected as a function of public FTE enrollment and the average of the present and previous years' personal income per capita. The low alternative projection method for total current expenditures on student education gives a figure of $19.7 billion in 1988-89, about $7 billion less than the intermediate alternative. The large difference between the low alternative projection and the intermediate projection ($26.8 billion vs. $19.7 billion) occurs because public FTE enrollment is incorporated in the dependent variable in the low alternative equation and thus has a stronger total effect on student education expenditures. Since public FTE enrollment is decreasing, the effect is to hold down the increase in these expenditures due to personal income per capita increases.

*Capital Outlay*

Annual capital outlay of public institutions of higher education (in 1978-79 dollars) decreased from $7.0 billion in 1968-69 to $3.8 billion in 1977-78 and is expected to continue its decline to $1.9 billion in 1988-89 (figure 25). Capital outlay is projected as a function of public FTE enrollment and new public construction put-in-place by all levels of government. No account was taken of possible deferred maintenance which might lead to major expenditures on rennovation during the 1980's because the data are not available.

## Private Institutions of Higher Education

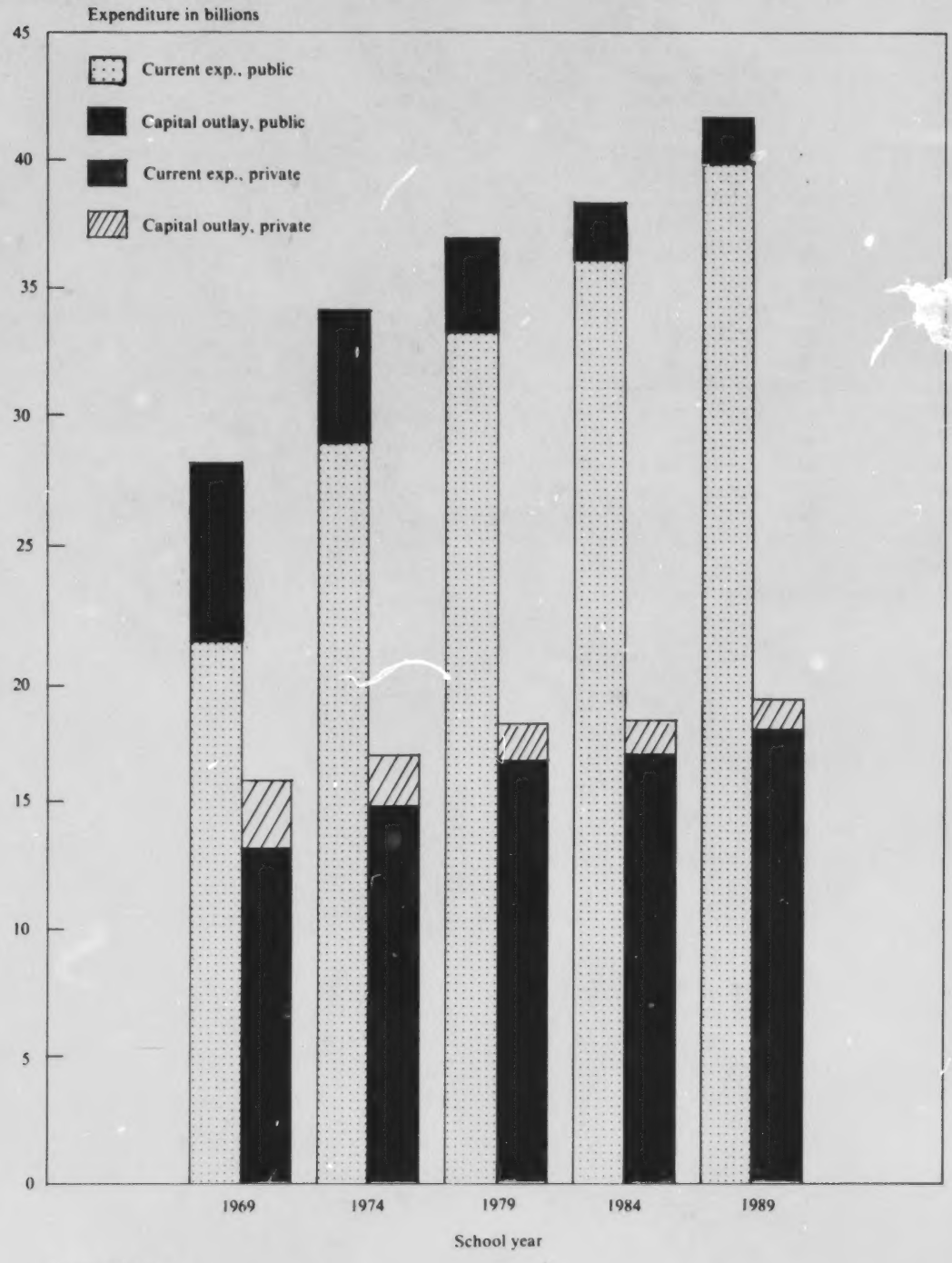
### Total Expenditures

Annual total expenditures (excluding transfers) of private institutions of higher education (in 1978-79 dollars) increased from $15.8 billion in 1968-69 to $17.6 billion in 1977-78 and are projected to reach $19.0 billion in 1988-89. This represents an 11.4 percent increase from 1968-69 to 1977-78 and an 8.0 percent increase from 1977-78 to 1988-89. Private FTE enrollment, on the other hand, increased by 16.9 percent from 1968-69 to 1977-78 but is projected to decrease by 7.5 percent from 1977-78 to 1988-89. Although total expenditures increased throughout most of the time span from 1968-69 to 1977-78, they are expected to drop slightly from $18.0 billion in 1978-79 to $17.8 billion in 1980-81 before resuming their upward trend through 1988-89. This drop is due to the FTE drop in the 1980's reinforced by an expected drop in constant dollar personal income per capita for 1979-80 and 1980-81.

*Current Expenditures*

Annual current expenditures (excluding transfers) of private institutions of higher education (in 1978-79 dollars) increased from $13.2 billion in 1968-69 to $16.3 billion in 1977-78 and are expected to reach $17.8 billion in 1988-89 (figure 25). Falling FTE enrollment and declining constant dollar personal income per capita result in no growth years in

**Figure 25.—Expenditures (in 1978-79 dollars) of public and private institutions of higher education, by type and control: United States, 1969-1989**




Source: Table 37.

1979-80 and 1980-81. Although projections show a generally low or no growth rate for this category of expenditure, it is not yet clear exactly what types of financial problems if any, private institutions of higher education will face in the 1980's. As low as these projections are, they may be too high if declining enrollment forces a significant number of institutions to retrench or to close their doors.

*Capital Outlay*

Annual capital outlay of private institutions of higher education (in 1978-79 dollars) was $2.5 billion in 1968-69, declined to $1.3 billion in 1977-78, and is projected to decline slightly to $1.2 billion in 1985-86 and remain at that level through 1988-89 (figure 25). Capital outlay of private institutions is projected as a function of only one variable, private FTE enrollment, which is projected to decline throughout the 1980's. Capital outlay seems to stabilize at the $1.2 billion level due to the continuing need for equipment replacement, building renovation, and the ability of some schools to attract more students even while the national FTE enrollment falls.

**Table 36.—Estimated expenditures by regular and "other" educational institutions, by instructional level and control of institution and source of funds: United States, 1965-66 to 1977-78[1]**

| Level and control of institution and source of funds | 1965-66 | 1967-78 | 1969-70 | 1971-72 | 1973-74 | 1975-76 | 1977-78 |
|---|---|---|---|---|---|---|---|
| | | | | Amount, billions of current, unadjusted dollars | | | |
| **All levels:** | | | | | | | |
| Total, public and nonpublic | $ 45.2 | $ 57.2 | $ 70.4 | $ 83.0 | $ 98.0 | $121.8 | $140.4 |
| Federal | 5.0 | 6.8 | 7.5 | 9.2 | 10.2 | 13.0 | 14.6 |
| State | 13.1 | 16.9 | 22.2 | 25.8 | 33.3 | 43.9 | 51.1 |
| Local | 15.1 | 18.6 | 22.6 | 26.7 | 29.8 | 35.1 | 39.1 |
| All other | 12.0 | 14.9 | 18.1 | 21.3 | 24.7 | 29.8 | 35.6 |
| Total, public | 35.3 | 45.5 | 56.8 | 67.4 | 80.1 | 100.2 | 114.6 |
| Federal | 3.6 | 5.1 | 5.8 | 7.4 | 8.3 | 10.5 | 11.7 |
| State | 13.0 | 16.8 | 22.1 | 25.6 | 33.0 | 43.6 | 50.8 |
| Local | 15.1 | 18.6 | 22.5 | 26.6 | 29.7 | 35.0 | 39.0 |
| All other | 3.6 | 5.0 | 6.4 | 7.8 | 9.1 | 11.1 | 13.2 |
| Total, nonpublic | 9.9 | 11.7 | 13.6 | 15.6 | 17.9 | 21.6 | 25.7 |
| Federal | 1.4 | 1.7 | 1.7 | 1.8 | 1.9 | 2.5 | 2.9 |
| State | .1 | .1 | .1 | .2 | .3 | .3 | .3 |
| Local | (2) | (2) | .1 | .1 | .1 | .1 | .1 |
| All other | 8.4 | 9.9 | 11.7 | 13.5 | 15.6 | 18.7 | 22.4 |
| **Elementary and secondary schools:** | | | | | | | |
| Total, public and nonpublic | 30.0 | 37.3 | 45.7 | 53.8 | 63.7 | 79.1 | 90.9 |
| Federal | 2.1 | 3.0 | 3.4 | 4.6 | 5.1 | 6.5 | 7.7 |
| State | 9.6 | 12.1 | 15.8 | 18.0 | 23.6 | 31.1 | 36.0 |
| Local | 14.7 | 18.0 | 21.7 | 25.6 | 28.4 | 33.4 | 37.3 |
| All other | 3.6 | 4.2 | 4.8 | 5.6 | 6.6 | 8.1 | 9.8 |
| Total, public | 26.5 | 33.2 | 41.0 | 48.3 | 57.2 | 71.1 | 81.2 |
| Federal | 2.1 | 3.0 | 3.4 | 4.6 | 5.1 | 6.5 | 7.7 |
| State | 9.6 | 12.1 | 15.8 | 18.0 | 23.6 | 31.1 | 36.0 |
| Local | 14.7 | 18.0 | 21.7 | 25.6 | 28.4 | 33.4 | 37.3 |
| All other | .1 | .1 | .1 | .1 | .1 | .1 | .2 |
| Total, nonpublic | 3.5 | 4.1 | 4.7 | 5.5 | 6.5 | 8.0 | 9.6 |
| Federal | ... | ... | ... | ... | ... | ... | ... |
| State | ... | ... | ... | ... | ... | ... | ... |
| Local | ... | ... | ... | ... | ... | ... | ... |
| All other | 3.5 | 4.1 | 4.7 | 5.5 | 6.5 | 8.0 | ... |
| **Institutions of higher education:** | | | | | | | |
| Total, public and nonpublic | 15.2 | 19.9 | 24.7 | 29.2 | 34.3 | 42.7 | 49.5 |
| Federal | 2.9 | 3.8 | 4.1 | 4.6 | 5.1 | 6.5 | 7.8 |
| State | 3.5 | 4.8 | 6.4 | 7.8 | 9.7 | 12.8 | 15.1 |
| Local | .4 | .6 | .9 | 1.1 | 1.4 | 1.7 | 1.8 |
| All other | 8.4 | 10.7 | 13.3 | 15.7 | 18.1 | 21.7 | 25.8 |
| Total, public | 8.8 | 12.3 | 15.8 | 19.1 | 22.9 | 29.1 | 33.4 |
| Federal | 1.5 | 2.1 | 2.4 | 2.8 | 3.2 | 4.0 | 4.0 |
| State | 3.4 | 4.7 | 6.3 | 7.6 | 9.4 | 12.5 | 14.8 |
| Local | .4 | .6 | .8 | 1.0 | 1.3 | 1.6 | 1.7 |
| All other | 3.5 | 4.9 | 6.3 | 7.7 | 9.0 | 11.0 | 13.0 |
| Total, nonpublic | 6.4 | 7.6 | 8.9 | 10.1 | 11.4 | 13.6 | 16.1 |
| Federal | 1.4 | 1.7 | 1.7 | 1.8 | 1.9 | 2.5 | 2.9 |
| State | .1 | .1 | .1 | .2 | .3 | .3 | .3 |
| Local | (2) | (2) | .1 | .1 | .1 | .1 | .1 |
| All other | 4.9 | 5.8 | 7.0 | 8.0 | 9.1 | 10.7 | 12.8 |
| | | | | Percent | | | |
| **All levels:** | | | | | | | |
| Total, public and nonpublic | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 11.1 | 11.9 | 10.7 | 11.1 | 10.4 | 10.7 | 10.4 |
| State | 29.0 | 29.5 | 31.5 | 31.1 | 33.9 | 36.0 | 36.4 |
| Local | 33.4 | 32.5 | 32.1 | 32.2 | 30.5 | 28.8 | 27.8 |
| All other | 26.5 | 26.1 | 25.7 | 25.6 | 25.2 | 24.5 | 25.4 |

See footnotes at end of table.

**Table 36.—Estimated expenditures by regular and "other" educational institutions, by instructional level and control of institution and source of funds: United States, 1965-66 to 1977-78[1]—Cont.**

| Level and control of institution and source of funds | 1965-66 | 1967-68 | 1969-70 | 1971-72 | 1973-74 | 1975-76 | 1977-78 |
|---|---|---|---|---|---|---|---|
| | | | | Percent—Cont. | | | |
| Total, public | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 10.2 | 11.2 | 10.2 | 11.0 | 10.4 | 10.5 | 10.2 |
| State | 36.8 | 36.9 | 38.9 | 38.0 | 41.1 | 43.5 | 44.3 |
| Local | 42.8 | 40.9 | 39.6 | 39.4 | 37.2 | 34.9 | 34.0 |
| All other | 10.2 | 11.0 | 11.3 | 11.6 | 11.3 | 11.1 | 11.5 |
| Total, nonpublic | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 14.1 | 14.5 | 12.5 | 11.5 | 10.6 | 11.6 | 11.3 |
| State | 1.0 | .9 | .7 | 1.3 | 1.7 | 1.4 | 1.2 |
| Local | [3] | [3] | .7 | .7 | .6 | .4 | .4 |
| All other | 84.9 | 84.6 | 86.1 | 86.5 | 87.1 | 86.6 | 87.2 |
| **Elementary and secondary schools:** | | | | | | | |
| Total, public and nonpublic | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 7.0 | 8.0 | 7.4 | 8.5 | 8.0 | 8.2 | 8.5 |
| State | 32.0 | 32.4 | 34.6 | 33.5 | 37.0 | 39.3 | 39.7 |
| Local | 49.0 | 48.3 | 47.5 | 47.6 | 44.7 | 42.2 | 41.0 |
| All other | 12.0 | 11.3 | 10.5 | 10.4 | 10.3 | 10.3 | 10.8 |
| Total, public | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 8.0 | 9.0 | 8.2 | 9.1 | 8.8 | 9.2 | 9.5 |
| State | 36.3 | 36.5 | 38.6 | 37.2 | 41.2 | 43.7 | 44.3 |
| Local | 55.3 | 54.2 | 52.9 | 53.5 | 49.8 | 47.0 | 45.9 |
| All other | .4 | .3 | .3 | .2 | .2 | .1 | .3 |
| Total, nonpublic | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | ... | ... | ... | ... | ... | ... | ... |
| State | ... | ... | ... | ... | ... | ... | ... |
| Local | ... | ... | ... | ... | ... | ... | ... |
| All other | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| **Institutions of higher education:** | | | | | | | |
| Total, public and nonpublic | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 19.1 | 19.1 | 16.6 | 15.7 | 14.9 | 15.2 | 13.8 |
| State | 23.0 | 24.1 | 25.9 | 26.7 | 28.3 | 30.0 | 30.5 |
| Local | 2.6 | 3.0 | 3.6 | 3.8 | 4.1 | 4.0 | 3.7 |
| All other | 55.3 | 53.8 | 53.9 | 53.8 | 52.7 | 50.8 | 52.0 |
| Total, public | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 17.6 | 17.3 | 14.9 | 14.7 | 14.1 | 13.8 | 11.9 |
| State | 38.4 | 38.2 | 39.7 | 39.7 | 41.1 | 43.0 | 44.2 |
| Local | 4.1 | 4.6 | 5.1 | 5.4 | 5.5 | 5.4 | 5.1 |
| All other | 39.9 | 39.9 | 40.3 | 40.2 | 39.3 | 37.8 | 38.8 |
| Total, nonpublic | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Federal | 22.1 | 22.1 | 18.8 | 18.3 | 17.1 | 18.1 | 17.8 |
| State | 1.5 | 1.3 | 1.6 | 2.0 | 2.5 | 2.3 | 2.0 |
| Local | .1 | .3 | .7 | .5 | .6 | .8 | .7 |
| All other | 76.3 | 76.3 | 78.9 | 79.2 | 79.8 | 78.8 | 79.6 |

[1]The annual expenditures of "other" elementary and secondary schools were estimated as follows: Public, $200 million annually, 1965-66 to 1973-74, $300 million in 1975-76, and $400 million in 1977-78; nonpublic, $100 million annually, 1965-66 to 1977-78.

[2]Less than $50 million.

[3]Less than 0.05 percent.

NOTE.—Data are for 50 States and the District of Columbia for all years. Details may not add to totals due to rounding.

SOURCES: Data for the table above were based on (1) statistics shown in U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (a) *Statistics of State School Systems*, biennially, 1965-66 through 1973-74, (b) *Revenues and Expenditures for Public Elementary and Secondary Education*, 1975-76 through 1977-78, (c) *Financial Statistics of Institutions of Higher Education*, annually, 1965-66 through 1977-78 and (2) National Center for Education Statistics unpublished data.

**Table 37.—Expenditures (1978-79 dollars) of regular educational institutions, with alternative projections, by instructional level and control of institution: United States, 1968-69 to 1988-89**

**(In billions of 1978-79 dollars)**

| Year and control | Total (all levels) | Elementary and secondary schools[1] (nonpublic school expenditures estimated on the basis of expenditures per teacher in public schools) | | | | Institutions of higher education[2] | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | Current expenditures[3] | Capital outlay[4] | Interest[5] | Total | Current expenditures[6] | Capital outlay[7] |
| 1968-69: | | | | | | | | |
| Total | 128.8 | 84.8 | 70.2 | 12.3 | 2.3 | 44.0 | 34.4 | 9.6 |
| Public | 104.2 | 76.0 | 62.9 | 11.0 | 2.1 | 28.2 | 21.2 | 7.0 |
| Nonpublic | 24.6 | 8.8 | 7.3 | 1.3 | .2 | 15.8 | 13.2 | 2.5 |
| 1969-70: | | | | | | | | |
| Total | 137.7 | 91.4 | 77.5 | 11.3 | 2.6 | 46.3 | 36.9 | 9.4 |
| Public | 111.6 | 81.9 | 69.5 | 10.1 | 2.3 | 29.7 | 23.0 | 6.6 |
| Nonpublic | 26.1 | 9.5 | 8.0 | 1.2 | .3 | 16.6 | 13.9 | 2.7 |
| 1970-71: | | | | | | | | |
| Total | 143.4 | 95.4 | 81.4 | 11.3 | 2.7 | 48.0 | 39.3 | 8.7 |
| Public | 117.1 | 85.7 | 73.1 | 10.2 | 2.4 | 31.4 | 25.1 | 6.3 |
| Nonpublic | 26.3 | 9.7 | 8.3 | 1.1 | .3 | 16.6 | 14.2 | 2.4 |
| 1971-72: | | | | | | | | |
| Total | 143.4 | 93.7 | 81.7 | 9.3 | 2.7 | 49.7 | 41.5 | 8.1 |
| Public | 116.9 | 84.3 | 73.5 | 8.4 | 2.4 | 32.6 | 26.7 | 5.9 |
| Nonpublic | 26.5 | 9.4 | 8.2 | .9 | .3 | 17.1 | 14.8 | 2.2 |
| 1972-73: | | | | | | | | |
| Total | 145.5 | 94.6 | 83.7 | 8.1 | 2.8 | 50.9 | 43.6 | 7.3 |
| Public | 119.0 | 85.3 | 75.5 | 7.3 | 2.5 | 33.7 | 28.3 | 5.4 |
| Nonpublic | 26.5 | 9.3 | 8.2 | .8 | .3 | 17.2 | 15.3 | 1.9 |
| 1973-74: | | | | | | | | |
| Total | 146.9 | 95.9 | 84.6 | 8.8 | 2.6 | 51.0 | 43.9 | 7.0 |
| Public | 120.7 | 86.5 | 76.3 | 7.9 | 2.3 | 34.2 | 29.0 | 5.2 |
| Nonpublic | 26.2 | 9.4 | 8.3 | .9 | .3 | 16.8 | 14.9 | 1.8 |
| 1974-75: | | | | | | | | |
| Total | 148.8 | 97.4 | 86.4 | 8.3 | 2.7 | 51.4 | 45.1 | 6.3 |
| Public | 122.4 | 87.7 | 77.8 | 7.5 | 2.4 | 34.7 | 30.2 | 4.6 |
| Nonpublic | 26.3 | 9.6 | 8.6 | .8 | .3 | 16.7 | 14.9 | 1.7 |
| 1975-76: | | | | | | | | |
| Total | 152.1 | 99.3 | 88.5 | 8.2 | 2.7 | 52.8 | 46.8 | 6.0 |
| Public | 125.3 | 89.3 | 79.5 | 7.4 | 2.4 | 36.0 | 31.5 | 4.5 |
| Nonpublic | 26.9 | 10.1 | 9.0 | .8 | .3 | 16.8 | 15.3 | 1.5 |
| 1976-77: | | | | | | | | |
| Total | 152.9 | 98.6 | 88.9 | 7.2 | 2.6 | 54.3 | 48.5 | 5.7 |
| Public | 124.8 | 88.0 | 79.4 | 6.4 | 2.3 | 36.8 | 32.6 | 4.2 |
| Nonpublic | 28.1 | 10.6 | 9.5 | .8 | .3 | 17.5 | 15.9 | 1.6 |
| 1977-78: | | | | | | | | |
| Total | 152.4 | 98.2 | 89.4 | 6.5 | 2.4 | 54.2 | 49.1 | 5.1 |
| Public | 124.4 | 87.9 | 80.0 | 5.8 | 2.1 | 36.5 | 32.8 | 3.8 |
| Nonpublic | 28.0 | 10.4 | 9.4 | .7 | .3 | 17.6 | 16.3 | 1.3 |
| | | Intermediate alternative projections[8] | | | | | | |
| 1978-79: | | | | | | | | |
| Total | 155.0 | 100.0 | 91.0 | 6.7 | 2.4 | 55.0 | 49.9 | 5.0 |
| Public | 126.4 | 89.4 | 81.3 | 6.0 | 2.1 | 37.0 | 33.3 | 3.7 |
| Nonpublic | 28.6 | 10.6 | 9.7 | .7 | .3 | 18.0 | 16.6 | 1.3 |

See footnotes at end of table.

**Table 37.—Expenditures (1978-79 dollars) of regular educational institutions, with alternative projections, by instructional level and control of institution: United States, 1968-69 to 1988-89—Cont.**

**(In billions of 1978-79 dollars)**

| Year and control | Total (all levels) | Elementary and secondary schools[1] (nonpublic school expenditures estimated on the basis of expenditures per teacher in public schools) | | | | Institutions of higher education[2] | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | Current expenditures[3] | Capital outlay[4] | Interest[5] | Total | Current expenditures[6] | Capital outlay[7] |
| 1979-80: | | | | | | | | |
| Total | 154.4 | 99.3 | 90.6 | 6.4 | 2.3 | 55.1 | 50.1 | 5.0 |
| Public | 125.7 | 88.3 | 80.6 | 5.7 | 2.0 | 37.4 | 33.7 | 3.7 |
| Nonpublic | 28.7 | 11.0 | 10.0 | .7 | .3 | 17.7 | 16.4 | 1.3 |
| 1980-81: | | | | | | | | |
| Total | 153.0 | 98.2 | 89.9 | 6.1 | 2.3 | 54.8 | 50.4 | 4.4 |
| Public | 124.2 | 87.1 | 79.8 | 5.4 | 2.0 | 37.1 | 34.0 | 3.1 |
| Nonpublic | 28.8 | 11.1 | 10.1 | .7 | .3 | 17.7 | 16.4 | 1.3 |
| 1981-82: | | | | | | | | |
| Total | 152.9 | 97.9 | 89.9 | 5.9 | 2.3 | 55.0 | 51.0 | 4.0 |
| Public | 123.9 | 86.7 | 79.6 | 5.2 | 2.0 | 37.2 | 34.5 | 2.7 |
| Nonpublic | 29.0 | 11.2 | 10.3 | .7 | .3 | 17.8 | 16.5 | 1.3 |
| 1982-83: | | | | | | | | |
| Total | 153.8 | 98.0 | 90.2 | 5.6 | 2.3 | 55.8 | 52.1 | 3.8 |
| Public | 124.8 | 87.0 | 80.0 | 5.0 | 2.0 | 37.8 | 35.4 | 2.5 |
| Nonpublic | 29.0 | 11.0 | 10.2 | .6 | .3 | 18.0 | 16.7 | 1.3 |
| 1983-84: | | | | | | | | |
| Total | 156.1 | 99.5 | 91.8 | 5.6 | 2.3 | 56.6 | 53.0 | 3.6 |
| Public | 126.3 | 87.9 | 81.0 | 4.9 | 2.0 | 38.4 | 36.1 | 2.3 |
| Nonpublic | 29.9 | 11.7 | 10.8 | .7 | .3 | 18.2 | 16.9 | 1.3 |
| 1984-85: | | | | | | | | |
| Total | 158.3 | 101.2 | 93.4 | 5.6 | 2.3 | 57.1 | 53.7 | 3.4 |
| Public | 128.1 | 89.2 | 82.4 | 4.9 | 2.0 | 38.9 | 36.7 | 2.1 |
| Nonpublic | 30.2 | 12.0 | 11.0 | .7 | .3 | 18.2 | 17.0 | 1.3 |
| 1985-86: | | | | | | | | |
| Total | 162.2 | 104.5 | 95.9 | 6.4 | 2.3 | 57.7 | 54.4 | 3.3 |
| Public | 131.4 | 92.1 | 84.5 | 5.6 | 2.0 | 39.3 | 37.3 | 2.1 |
| Nonpublic | 30.7 | 12.4 | 11.4 | .8 | .3 | 18.3 | 17.1 | 1.2 |
| 1986-87: | | | | | | | | |
| Total | 166.7 | 108.1 | 99.0 | 6.8 | 2.3 | 58.6 | 55.3 | 3.2 |
| Public | 135.1 | 95.1 | 87.1 | 6.0 | 2.0 | 40.0 | 38.0 | 2.0 |
| Nonpublic | 31.5 | 13.0 | 11.9 | .8 | .3 | 18.5 | 17.3 | 1.2 |
| 1987-88: | | | | | | | | |
| Total | 171.2 | 111.5 | 102.4 | 6.8 | 2.3 | 59.7 | 56.5 | 3.2 |
| Public | 138.9 | 98.0 | 90.0 | 6.0 | 2.0 | 40.9 | 38.9 | 2.0 |
| Nonpublic | 32.3 | 13.5 | 12.4 | .8 | .3 | 18.8 | 17.6 | 1.2 |
| 1988-89: | | | | | | | | |
| Total | 175.3 | 114.6 | 105.4 | 6.8 | 2.3 | 60.7 | 57.6 | 3.1 |
| Public | 142.3 | 100.6 | 92.5 | 6.0 | 2.0 | 41.7 | 39.8 | 1.9 |
| Nonpublic | 33.0 | 14.0 | 12.9 | .8 | .3 | 19.0 | 17.8 | 1.2 |
| **Low alternative projections[8]** | | | | | | | | |
| 1978-79: | | | | | | | | |
| Total | 154.1 | 100.0 | 91.0 | 6.7 | 2.4 | 54.1 | 48.8 | 5.4 |
| Public | 125.6 | 89.4 | 81.3 | 6.0 | 2.1 | 36.2 | 32.1 | 4.1 |
| Nonpublic | 28.5 | 10.6 | 9.7 | .7 | .3 | 17.9 | 16.6 | 1.3 |
| 1979-80: | | | | | | | | |
| Total | 152.6 | 99.2 | 90.6 | 6.4 | 2.2 | 53.4 | 48.4 | 5.0 |
| Public | 124.1 | 88.3 | 80.6 | 5.7 | 2.0 | 35.8 | 32.1 | 3.7 |
| Nonpublic | 28.5 | 10.9 | 10.0 | .7 | .2 | 17.6 | 16.3 | 1.3 |

See footnotes at end of table.

**Table 37.—Expenditures (1978-79 dollars) of regular educational institutions, with alternative projections, by instructional level and control of institution: United States, 1968-69 to 1988-89—Cont.**

**(In billions of 1978-79 dollars)**

| Year and control | Total (all levels) | Elementary and secondary schools[1] (nonpublic school expenditures estimated on the basis of expenditures per teacher in public schools) | | | | Institutions of higher education[2] | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | Current expenditures[3] | Capital outlay[4] | Interest[5] | Total | Current expenditures[6] | Capital outlay[7] |
| 1980-81: | | | | | | | | |
| Total | 150.0 | 98.2 | 89.9 | 6.1 | 2.2 | 51.8 | 47.6 | 4.3 |
| Public | 121.6 | 87.1 | 79.8 | 5.4 | 2.0 | 34.5 | 31.5 | 3.0 |
| Nonpublic | 28.4 | 11.1 | 10.1 | .7 | .2 | 17.3 | 16.1 | 1.3 |
| 1981-82: | | | | | | | | |
| Total | 149.6 | 97.8 | 89.8 | 5.9 | 2.1 | 51.8 | 47.9 | 3.9 |
| Public | 121.1 | 86.6 | 79.5 | 5.2 | 1.9 | 34.5 | 31.8 | 2.6 |
| Nonpublic | 28.5 | 11.2 | 10.3 | .7 | .2 | 17.3 | 16.1 | 1.3 |
| 1982-83: | | | | | | | | |
| Total | 149.9 | 97.6 | 89.8 | 5.6 | 2.1 | 52.3 | 48.6 | 3.7 |
| Public | 121.3 | 86.6 | 79.7 | 5.0 | 1.9 | 34.7 | 32.3 | 2.4 |
| Nonpublic | 28.6 | 11.0 | 10.1 | .6 | .2 | 17.6 | 16.3 | 1.3 |
| 1983-84: | | | | | | | | |
| Total | 151.5 | 98.8 | 91.1 | 5.6 | 2.2 | 52.7 | 49.2 | 3.5 |
| Public | 122.1 | 87.2 | 80.4 | 4.9 | 1.9 | 34.9 | 32.7 | 2.2 |
| Nonpublic | 29.4 | 11.6 | 10.7 | .7 | .3 | 17.8 | 16.5 | 1.3 |
| 1984-85: | | | | | | | | |
| Total | 152.8 | 100.1 | 92.5 | 5.4 | 2.2 | 52.7 | 49.3 | 3.4 |
| Public | 123.0 | 88.3 | 81.6 | 4.8 | 1.9 | 34.7 | 32.5 | 2.2 |
| Nonpublic | 29.8 | 11.8 | 10.9 | .6 | .3 | 18.0 | 16.8 | 1.2 |
| 1985-86: | | | | | | | | |
| Total | 155.6 | 103.3 | 94.9 | 6.2 | 2.2 | 52.3 | 49.1 | 3.3 |
| Public | 125.1 | 90.9 | 83.5 | 5.5 | 1.9 | 34.2 | 32.2 | 2.1 |
| Nonpublic | 30.5 | 12.4 | 11.4 | .7 | .3 | 18.1 | 16.9 | 1.2 |
| 1986-87: | | | | | | | | |
| Total | 158.4 | 106.4 | 97.4 | 6.8 | 2.2 | 52.0 | 49.0 | 3.1 |
| Public | 127.6 | 93.6 | 85.7 | 6.0 | 1.9 | 34.0 | 32.1 | 1.9 |
| Nonpublic | 30.8 | 12.8 | 11.7 | .8 | .3 | 18.0 | 16.9 | 1.2 |
| 1987-88: | | | | | | | | |
| Total | 161.6 | 109.4 | 100.4 | 6.8 | 2.2 | 52.2 | 49.3 | 3.0 |
| Public | 130.2 | 96.1 | 88.2 | 6.0 | 1.9 | 34.1 | 32.3 | 1.8 |
| Nonpublic | 31.4 | 13.3 | 12.2 | .8 | .3 | 18.1 | 17.0 | 1.2 |
| 1988-89: | | | | | | | | |
| Total | 164.6 | 112.1 | 103.0 | 6.8 | 2.3 | 52.5 | 49.5 | 3.0 |
| Public | 132.5 | 98.4 | 90.4 | 6.0 | 1.9 | 34.1 | 32.3 | 1.8 |
| Nonpublic | 32.1 | 13.7 | 12.6 | .8 | .3 | 18.4 | 17.2 | 1.2 |
| **High alternative projections[8]** | | | | | | | | |
| 1978-79: | | | | | | | | |
| Total | 155.4 | 100.0 | 91.0 | 6.7 | 2.4 | 55.4 | 50.0 | 5.5 |
| Public | 126.8 | 89.4 | 81.3 | 6.0 | 2.1 | 37.4 | 33.4 | 4.1 |
| Nonpublic | 28.6 | 10.6 | 9.7 | .7 | .3 | 18.0 | 16.6 | 1.4 |
| 1979-80: | | | | | | | | |
| Total | 155.5 | 99.1 | 90.5 | 6.4 | 2.2 | 56.4 | 51.1 | 5.3 |
| Public | 126.3 | 88.2 | 80.5 | 5.7 | 2.0 | 38.1 | 34.3 | 3.9 |
| Nonpublic | 29.2 | 10.9 | 10.0 | .7 | .2 | 18.3 | 16.8 | 1.4 |
| 1980-81: | | | | | | | | |
| Total | 154.7 | 98.2 | 89.9 | 6.1 | 2.2 | 56.5 | 51.7 | 4.8 |
| Public | 125.2 | 87.1 | 79.8 | 5.4 | 2.0 | 38.1 | 34.7 | 3.3 |
| Nonpublic | 29.5 | 11.1 | 10.1 | .7 | .2 | 18.4 | 17.0 | 1.5 |

See footnotes at end of table.

**Table 37.—Expenditures (1978-79 dollars) of regular educational institutions, with alternative projections, by instructional level and control of institution: United States, 1968-69 to 1988-89—Cont.**

**(In billions of 1978-79 dollars)**

| Year and control | Total (all levels) | Elementary and secondary schools[1] (nonpublic school expenditures estimated on the basis of expenditures per teacher in public schools) | | | | Institutions of higher education[2] | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | Current expenditures[3] | Capital outlay[4] | Interest[5] | Total | Current expenditures[6] | Capital outlay[7] |
| 1981-82: | | | | | | | | |
| Total | 155.3 | 98.0 | 90.0 | 5.9 | 2.2 | 57.3 | 52.7 | 4.6 |
| Public | 125.4 | 86.8 | 79.7 | 5.2 | 1.9 | 38.6 | 35.5 | 3.1 |
| Nonpublic | 29.9 | 11.2 | 10.3 | .7 | .3 | 18.7 | 17.2 | 1.5 |
| 1982-83: | | | | | | | | |
| Total | 157.0 | 98.4 | 90.5 | 5.6 | 2.1 | 58.6 | 54.2 | 4.4 |
| Public | 126.8 | 87.3 | 80.3 | 5.0 | 1.9 | 39.5 | 36.6 | 2.9 |
| Nonpublic | 30.2 | 11.1 | 10.2 | .6 | .2 | 19.1 | 17.6 | 1.5 |
| 1983-84: | | | | | | | | |
| Total | 160.2 | 100.3 | 92.5 | 5.6 | 2.2 | 59.9 | 55.6 | 4.4 |
| Public | 129.0 | 88.5 | 81.6 | 4.9 | 1.9 | 40.5 | 37.7 | 2.8 |
| Nonpublic | 31.2 | 11.8 | 10.9 | .7 | .3 | 19.4 | 17.9 | 1.6 |
| 1984-85: | | | | | | | | |
| Total | 163.0 | 102.2 | 94.5 | 5.6 | 2.2 | 60.8 | 56.6 | 4.4 |
| Public | 131.3 | 90.1 | 83.3 | 4.9 | 1.9 | 41.2 | 38.5 | 2.8 |
| Nonpublic | 31.7 | 12.1 | 11.2 | .7 | .3 | 19.6 | 18.1 | 1.6 |
| 1985-86: | | | | | | | | |
| Total | 167.6 | 105.8 | 97.3 | 6.4 | 2.3 | 61.8 | 57.5 | 4.4 |
| Public | 135.2 | 93.2 | 85.7 | 5.6 | 2.0 | 42.0 | 39.2 | 2.8 |
| Nonpublic | 32.4 | 12.6 | 11.6 | .8 | .3 | 19.8 | 18.3 | 1.6 |
| 1986-87: | | | | | | | | |
| Total | 172.9 | 109.8 | 100.6 | 6.9 | 2.3 | 63.1 | 58.8 | 4.4 |
| Public | 139.6 | 96.6 | 88.5 | 6.1 | 2.0 | 43.0 | 40.2 | 2.8 |
| Nonpublic | 33.3 | 13.2 | 12.1 | .8 | .3 | 20.1 | 18.6 | 1.6 |
| 1987-88: | | | | | | | | |
| Total | 178.2 | 113.6 | 104.4 | 6.9 | 2.3 | 64.6 | 60.2 | 4.5 |
| Public | 143.9 | 99.8 | 91.7 | 6.1 | 2.0 | 44.1 | 41.3 | 2.9 |
| Nonpublic | 34.3 | 13.8 | 12.7 | .8 | .3 | 20.5 | 18.9 | 1.6 |
| 1988-89: | | | | | | | | |
| Total | 183.1 | 117.1 | 107.7 | 6.9 | 2.4 | 66.0 | 61.5 | 4.5 |
| Public | 148.0 | 102.8 | 94.6 | 6.1 | 2.1 | 45.2 | 42.3 | 2.9 |
| Nonpublic | 35.1 | 14.3 | 13.1 | .8 | .3 | 20.8 | 19.2 | 1.6 |

[1]Excludes expenditures for "other" schools. See table 36 on expenditures by source of funds (in current dollars) for data on these schools. All nonpublic elementary and secondary school expenditures shown here are estimated on the basis of expenditures per teacher in public elementary and secondary schools.

[2]Includes expenditures for subcollegiate departments of institutions of higher education, estimated at $95 million in 1975-76. Excludes expenditures for interest paid from plant funds. (An estimated $400 million was expended for total interest in 1975-76.)

[3]Includes current expenditures of public elementary and secondary school systems for community services, summer schools, community colleges, and adult education.

[4]Includes capital outlay of State and local school building authorities.

[5]Interest for nonpublic schools is based on interest for public schools.

[6]Includes expenditures for interest from current funds. Excludes transfers from current funds.

[7]The estimated annual capital outlay data shown here include estimated expenditures for replacement and rehabilitation.

[8]For methodological details see appendix A, section A-4. For primary assumptions made see appendix B.

NOTE.—Data are for 50 States and the District of Columbia. Because of rounding, details may not add to totals.

SOURCES: Data are a summary of tables 39 through 45, each of which indicates sources of data.

**Table 38.—Expenditures (current dollars) of regular educational institutions, by instructional level and control of institution: United States, 1968-69 to 1977-78**

**(In billions of current, unadjusted dollars)**

| Year and control | Total (all levels) | Elementary and secondary schools[1] (nonpublic school expenditures estimated on the basis of expenditures per teacher in public schools) | | | | Institutions of higher education[2] | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | Current expenditures[3] | Capital outlay[4] | Interest[5] | Total | Current expenditures[6] | Capital outlay[7] |
| 1968-69: | | | | | | | | |
| Total | 61.2 | 39.2 | 32.9 | 5.2 | 1.1 | 22.0 | 17.9 | 4.1 |
| Public | 49.2 | 35.2 | 29.5 | 4.7 | 1.0 | 14.0 | 11.0 | 3.0 |
| Nonpublic | 12.0 | 4.0 | 3.4 | .5 | .1 | 8.0 | 6.9 | 1.1 |
| 1969-70: | | | | | | | | |
| Total | 70.1 | 45.4 | 38.9 | 5.2 | 1.3 | 24.7 | 20.3 | 4.4 |
| Public | 56.6 | 40.8 | 34.9 | 4.7 | 1.2 | 15.8 | 12.7 | 3.1 |
| Nonpublic | 13.5 | 4.6 | 4.0 | .5 | .1 | 8.9 | 7.6 | 1.3 |
| 1970-71: | | | | | | | | |
| Total | 78.4 | 51.3 | 44.1 | 5.7 | 1.5 | 27.1 | 22.8 | 4.3 |
| Public | 63.7 | 46.0 | 39.6 | 5.1 | 1.3 | 17.7 | 14.6 | 3.1 |
| Nonpublic | 14.7 | 5.3 | 4.5 | .6 | .2 | 9.4 | 8.2 | 1.2 |
| 1971-72: | | | | | | | | |
| Total | 82.7 | 53.5 | 46.9 | 5.0 | 1.6 | 29.2 | 24.9 | 4.3 |
| Public | 67.2 | 48.1 | 42.2 | 4.5 | 1.4 | 19.1 | 16.0 | 3.1 |
| Nonpublic | 15.5 | 5.4 | 4.7 | .5 | .2 | 10.1 | 8.9 | 1.2 |
| 1972-73: | | | | | | | | |
| Total | 89.1 | 57.7 | 51.2 | 4.7 | 1.7 | 31.4 | 27.3 | 4.1 |
| Public | 72.6 | 51.9 | 46.2 | 4.1 | 1.5 | 20.7 | 17.7 | 3.0 |
| Nonpublic | 16.5 | 5.8 | 5.0 | .6 | .2 | 10.7 | 9.6 | 1.1 |
| 1973-74: | | | | | | | | |
| Total | 97.6 | 63.3 | 56.0 | 5.6 | 1.7 | 34.3 | 29.9 | 4.4 |
| Public | 79.9 | 57.0 | 50.5 | 5.0 | 1.5 | 22.9 | 19.7 | 3.2 |
| Nonpublic | 17.7 | 6.3 | 5.5 | .6 | .2 | 11.4 | 10.2 | 1.2 |
| 1974-75: | | | | | | | | |
| Total | 110.8 | 71.9 | 63.7 | 6.3 | 1.9 | 38.9 | 34.1 | 4.8 |
| Public | 91.1 | 64.8 | 57.4 | 5.7 | 1.7 | 26.3 | 22.8 | 3.5 |
| Nonpublic | 19.7 | 7.1 | 6.3 | .6 | .2 | 12.6 | 11.3 | 1.3 |
| 1975-76: | | | | | | | | |
| Total | 121.6 | 78.9 | 70.1 | 6.6 | 2.1 | 42.7 | 37.9 | 4.8 |
| Public | 100.0 | 70.9 | 63.0 | 5.9 | 1.9 | 29.1 | 25.5 | 3.6 |
| Nonpublic | 21.6 | 8.0 | 7.1 | .7 | .2 | 13.6 | 12.4 | 1.2 |
| 1976-77: | | | | | | | | |
| Total | 130.3 | 83.9 | 75.8 | 5.9 | 2.2 | 46.4 | 41.5 | 4.8 |
| Public | 106.4 | 75.0 | 67.7 | 5.3 | 2.0 | 31.4 | 27.9 | 3.5 |
| Nonpublic | 23.8 | 8.9 | 8.1 | .6 | .2 | 14.9 | 13.6 | 1.3 |
| 1977-78: | | | | | | | | |
| Total | 139.8 | 90.3 | 82.3 | 5.8 | 2.2 | 49.5 | 44.9 | 4.6 |
| Public | 114.2 | 80.8 | 73.6 | 5.2 | 2.0 | 33.4 | 30.0 | 3.4 |
| Nonpublic | 25.6 | 9.5 | 8.7 | .6 | .2 | 16.1 | 14.9 | 1.2 |

[1]Excludes expenditures for "other" schools. See table 36 on expenditures by source of funds for data on these schools. All nonpublic elementary and secondary school expenditures shown here are estimated on the basis of expenditures per teacher in public elementary and secondary schools.

[2]Includes expenditures for subcollegiate departments of institutions of higher education, estimated at $95 million in 1975-76. Excludes expenditures for interest paid from plant funds. (An estimated $400 million was expended for total interest in 1975-76.)

[3]Includes current expenditures of public elementary and secondary school systems for community services, summer schools, community colleges, and adult education.

[4]Includes capital outlay of State and local school building authorities.

[5]Interest for nonpublic schools is based on interest for public schools.

[6]Includes expenditures for interest from current funds. Excludes transfers from current funds.

[7]The estimated annual capital outlay data shown here include estimated expenditures for replacement and rehabilitation.

NOTE.—Data are for 50 States and the District of Columbia. Because of rounding, details may not add to totals.

SOURCES: Data are a summary of tables 39 through 45, each of which indicates sources of data.

## Table 39.—Current expenditures of public school systems, with alternative projections: United States, 1968-69 to 1988-89

| Year | Average daily attendance (000s) | Allocated to pupil costs[1]: Per pupil in average daily attendance | | Allocated to pupil costs[1]: Total (in billions) | | All programs[2] total (in billions) | |
|---|---|---|---|---|---|---|---|
| | | Current dollars | 1978-79 dollars | Current dollars | 1978-79 dollars | Current dollars | 1978-79 dollars |
| 1968-69[3] | 41,639 | $ 696 | $1,484 | $29.0 | $61.8 | $29.5 | $62.9 |
| 1969-70 | 41,934 | 816 | 1,625 | 34.2 | 68.2 | 34.9 | 69.5 |
| 1970-71[3] | 42,428 | 911 | 1,681 | 38.7 | 71.3 | 39.6 | 73.1 |
| 1971-72 | 42,254 | 990 | 1,725 | 41.8 | 72.9 | 42.2 | 73.5 |
| 1972-73[4] | 42,179 | 1,077 | 1,760 | 45.4 | 74.2 | 46.2 | 75.5 |
| 1973-74[5] | 41,725 | 1,199 | 1,823 | 50.9 | 75.6 | 50.5 | 76.3 |
| 1974-75[4] | 41,574 | 1,365 | 1,852 | 56.7 | 76.9 | 57.4 | 77.8 |
| 1975-76[4] | 41,274 | 1,509 | 1,903 | 62.3 | 78.5 | 63.0 | 79.5 |
| 1976-77[4] | 40,832 | 1,638 | 1,920 | 66.9 | 78.4 | 67.7 | 79.4 |
| 1977-78[4] | 40,080 | 1,823 | 1,979 | 73.1 | 79.3 | 73.6 | 80.0 |
| **Intermediate alternative projections[6]** | | | | | | | |
| 1978-79 | 39,154 | 2,036 | 2,036 | 79.7 | 79.7 | 81.3 | 81.3 |
| 1979-80 | 38,232 | ... | 2,066 | ... | 79.0 | ... | 80.6 |
| 1980-81 | 37,440 | ... | 2,089 | ... | 78.2 | ... | 79.8 |
| 1981-82 | 36,669 | ... | 2,128 | ... | 78.0 | ... | 79.6 |
| 1982-83 | 35,982 | ... | 2,180 | ... | 78.5 | ... | 80.0 |
| 1983-84 | 35,573 | ... | 2,232 | ... | 79.4 | ... | 81.0 |
| 1984-85 | 35,412 | ... | 2,281 | ... | 80.8 | ... | 82.4 |
| 1985-86 | 35,464 | ... | 2,337 | ... | 82.9 | ... | 84.5 |
| 1986-87 | 35,678 | ... | 2,394 | ... | 85.4 | ... | 87.1 |
| 1987-88 | 35,947 | ... | 2,452 | ... | 88.1 | ... | 90.0 |
| 1988-89 | 36,224 | ... | 2,504 | ... | 90.7 | ... | 92.5 |
| **Low alternative projections[6]** | | | | | | | |
| 1978-79 | 39,154 | 2,036 | 2,036 | 79.7 | 79.7 | 81.3 | 81.3 |
| 1979-80 | 38,232 | ... | 2,066 | ... | 79.0 | ... | 80.6 |
| 1980-81 | 37,440 | ... | 2,089 | ... | 78.2 | ... | 79.8 |
| 1981-82 | 36,669 | ... | 2,125 | ... | 77.9 | ... | 79.5 |
| 1982-83 | 35,982 | ... | 2,172 | ... | 78.2 | ... | 79.7 |
| 1983-84 | 35,573 | ... | 2,217 | ... | 78.9 | ... | 80.4 |
| 1984-85 | 35,412 | ... | 2,259 | ... | 80.0 | ... | 81.6 |
| 1985-86 | 35,464 | ... | 2,307 | ... | 81.8 | ... | 83.5 |
| 1986-87 | 35,678 | ... | 2,356 | ... | 84.1 | ... | 85.7 |
| 1987-88 | 35,947 | ... | 2,406 | ... | 86.5 | ... | 88.2 |
| 1988-89 | 36,224 | ... | 2,448 | ... | 88.7 | ... | 90.4 |
| **High alternative projections[6]** | | | | | | | |
| 1978-79 | 39,154 | 2,036 | 2,036 | 79.7 | 79.7 | 81.3 | 81.3 |
| 1979-80 | 38,232 | ... | 2,065 | ... | 78.9 | ... | 80.5 |
| 1980-81 | 37,440 | ... | 2,089 | ... | 78.2 | ... | 79.8 |
| 1981-82 | 36,669 | ... | 2,131 | ... | 78.1 | ... | 79.7 |
| 1982-83 | 35,982 | ... | 2,189 | ... | 78.8 | ... | 80.3 |
| 1983-84 | 35,573 | ... | 2,249 | ... | 80.0 | ... | 81.6 |
| 1984-85 | 35,412 | ... | 2,305 | ... | 81.6 | ... | 83.3 |
| 1985-86 | 35,464 | ... | 2,368 | ... | 84.0 | ... | 85.7 |
| 1986-87 | 35,678 | ... | 2,433 | ... | 86.8 | ... | 88.5 |
| 1987-88 | 35,947 | ... | 2,500 | ... | 89.9 | ... | 91.7 |
| 1988-89 | 36,224 | ... | 2,560 | ... | 92.7 | ... | 94.6 |

[1]Includes only the current expenditures for public day schools allocated to pupil costs; excludes the other expenditures shown in footnote 2.

[2]Includes current expenditures for summer schools, adult education, and community colleges operated by school districts, in addition to expenditures allocable to pupil costs.

[3]Derived from estimates furnished by States.

[4]Derived from *Revenues and Expenditures for Public Elementary and Secondary Education*.

[5]1973-74 and prior biennial years from *Statistics of State School Systems*.

[6]For methodological details see appendix A, section A-4. For primary assumptions made, see appendix B.

NOTE—Data are for 50 States and the District of Columbia for all years. The expenditures shown in this table include current expenditures for administration of State boards of education and intermediate administrative units. Conversion to 1978-79 dollars was done on the basis of the PGSL index. See appendix F, table F-5.

SOURCES: Data are based on U.S. Department of Health, Education and Welfare, National Center for Education Statistics, publications: (1) *Statistics of State School Systems*, 1969-79 through 1973-74 biennial years), and (2) *Revenues and Expenditures for Public Elementary and Secondary Education*, 1972-73, 1974-75, through 1977-78.

**Table 40.—Current expenditures for salaries of classroom teachers in regular public elementary and secondary schools, with alternative projections: United States, 1968-69 to 1988-89**

| Year | Number of classroom teachers (000s) | Salaries of classroom teachers | | | |
|---|---|---|---|---|---|
| | | Average annual salary | | Total (in billions) | |
| | | Current dollars | 1978-79 dollars | Current dollars | 1978-79 dollars |
| 1968-69 | 1,936 | $ 8,260 | $15,885 | $16.0 | $30.8 |
| 1969-70[2] | 2,014 | 8,944 | 16,232 | 18.0 | 32.7 |
| 1970-71 | 2,055 | 9,695 | 16,744 | 19.9 | 34.4 |
| 1971-72[2] | 2,063 | 10,342 | 17,237 | 21.3 | 35.6 |
| 1972-73 | 2,103 | 10,530 | 16,848 | 22.1 | 35.4 |
| 1973-74[2] | 2,138 | 11,223 | 16,504 | 24.0 | 35.3 |
| 1974-75 | 2,165 | 12,291 | 16,258 | 26.6 | 35.2 |
| 1975-76 | 2,196 | 13,177 | 16,268 | 28.9 | 35.7 |
| 1976-77 | 2,186 | 14,134 | 16,512 | 30.9 | 36.1 |
| 1977-78 | 2,209 | 15,027 | 16,441 | 33.2 | 36.3 |
| 1978-79 | 2,199 | 15,867 | 15,867 | 34.9 | 34.9 |
| **Intermediate alternative projections[3]** | | | | | |
| 1979-80 | 2,169 | | 15,435 | | 33.5 |
| 1980-81 | 2,141 | | 15,160 | | 32.5 |
| 1981-82 | 2,114 | | 15,346 | | 32.4 |
| 1982-83 | 2,091 | | 15,488 | | 32.4 |
| 1983-84 | 2,084 | | 15,621 | | 32.6 |
| 1984-85 | 2,090 | | 15,791 | | 33.0 |
| 1985-86 | 2,108 | | 16,107 | | 34.0 |
| 1986-87 | 2,135 | | 16,497 | | 35.2 |
| 1987-88 | 2,164 | | 16,850 | | 36.5 |
| 1988-89 | 2,194 | | 17,115 | | 37.6 |
| **Low alternative projections[3]** | | | | | |
| 1979-80 | 2,169 | | 15,435 | | 33.5 |
| 1980-81 | 2,141 | | 15,160 | | 32.5 |
| 1981-82 | 2,114 | | 15,346 | | 32.4 |
| 1982-83 | 2,091 | | 15,406 | | 32.2 |
| 1983-84 | 2,084 | | 15,255 | | 31.8 |
| 1984-85 | 2,090 | | 15,105 | | 31.6 |
| 1985-86 | 2,108 | | 14,955 | | 31.5 |
| 1986-87 | 2,135 | | 14,804 | | 32.1 |
| 1987-88 | 2,164 | | 14,654 | | 31.7 |
| 1988-89 | 2,194 | | 14,504 | | 31.8 |
| **High alternative projections[3]** | | | | | |
| 1979-80 | 2,169 | | 15,866 | | 34.4 |
| 1980-81 | 2,141 | | 15,684 | | 33.6 |
| 1981-82 | 2,114 | | 15,951 | | 33.7 |
| 1982-83 | 2,091 | | 16,148 | | 33.8 |
| 1983-84 | 2,[illegible] | | 16,295 | | 34.0 |
| 1984-85 | 2,090 | | 16,448 | | 34.4 |
| 1985-86 | 2,108 | | 16,728 | | 35.3 |
| 1986-87 | 2,135 | | 17,072 | | 36.4 |
| 1987-88 | 2,164 | | 17,378 | | 37.6 |
| 1988-89 | 2,194 | | 17,602 | | 38.6 |

[1]Data on number of classroom teachers from table 28.
[2]Estimates of salaries derived from *Statistics of State School Systems*. For the other years, estimates are based on interpolations and extrapolations of the trend.
[3]For methodological details, see appendix A, section A-4.

NOTE.—Data are for 50 States and the District of Columbia for all years. Conversion to 1978-79 dollars was done on the basis of the Consumer Price Index. See appendix F, table F-5.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication: *Statistics of State School Systems*.

## Table 41.—Capital outlay of public elementary and secondary school systems, with projections: United States, 1968-69 to 1988-89

(In millions)

| Year | Total capital outlay, including construction, equipment, etc. | |
|---|---|---|
| | Current dollars | 1978-79 dollars |
| 1968-69[1] | $ 4,654 | $10,976 |
| 1969-70[2] | 4,659 | 10,063 |
| 1970-71[1] | 5,061 | 10,163 |
| 1971-72[2] | 4,459 | 8,366 |
| 1972-73[3] | 4,091 | 7,266 |
| 1968-69 to 1972-73 | 22,924 | 46,834 |
| 1973-74[2] | 4,979 | 7,878 |
| 1974-75[3] | 5,746 | 7,531 |
| 1975-76[3] | 5,920 | 7,354 |
| 1976-77[3] | 5,344 | 6,354 |
| 1977-78[3] | 5,245 | 5,783 |
| 1973-74 to 1977-78 | 27,234 | 34,900 |
| **Intermediate alternative projections[4]** | | |
| 1978-79 | 5,963 | 5,963 |
| 1979-80 | ... | 5,695 |
| 1980-81 | ... | 5,361 |
| 1981-82 | ... | 5,161 |
| 1982-83 | ... | 5,008 |
| 1978-79 to 1982-83 | ... | 27,188 |
| 1983-84 | ... | 4,914 |
| 1984-85 | ... | 4,859 |
| 1985-86 | ... | 5,556 |
| 1986-87 | ... | 6,010 |
| 1987-88 | ... | 6,027 |
| 1983-84 to 1987-88 | ... | 27,366 |
| 1988-89 | ... | 6,032 |
| **Low alternative projections[4]** | | |
| 1978-79 | ... | 5,963 |
| 1979-80 | ... | 5,695 |
| 1980-81 | ... | 5,361 |
| 1981-82 | ... | 5,159 |
| 1982-83 | ... | 4,998 |
| 1978-79 to 1982-83 | ... | 27,175 |
| 1983-84 | ... | 4,895 |
| 1984-85 | ... | 4,831 |
| 1985-86 | ... | 5,514 |
| 1986-87 | ... | 5,953 |
| 1987-88 | ... | 5,959 |
| 1983-84 to 1987-88 | ... | 27,152 |
| 1988-89 | ... | 5,953 |
| **High alternative projections[4]** | | |
| 1978-79 | ... | 5,963 |
| 1979-80 | ... | 5,695 |
| 1980-81 | ... | 5,361 |
| 1981-82 | ... | 5,165 |
| 1982-83 | ... | 5,019 |
| 1978-79 to 1982-83 | ... | 27,203 |

See footnotes at end of table.

**Table 41.—Capital outlay of public elementary and secondary school systems, with projections: United States, 1968-69 to 1988-89—Cont.**
**(In millions)**

| Year | Total capital outlay, including construction, equipment, etc. | |
|---|---|---|
| | Current dollars | 1978-79 dollars |
| 1983-84 | ... | 4,934 |
| 1984-85 | ... | 4,888 |
| 1985-86 | ... | 5,601 |
| 1986-87 | ... | 6,066 |
| 1987-88 | ... | 6,094 |
| 1983-84 to 1987-88 | ... | 27,583 |
| 1988-89 | ... | 6,111 |

[1]Estimates furnished by State education departments.
[2]From *Statistics of State School Systems*.
[3]From *Revenues and Expenditures for Public Elementary and Secondary Education*.
[4]For methodological details, see appendix A, section A-4. For primary assumptions made, see appendix B, section B-4.

NOTE.—Data are for 50 States and the District of Columbia for all years.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Statistics of State School Systems*, 1963-64 through 1973-74; (2) *Statistics of Public Schools*, fall 1965 through fall 1975; and (3) *Revenues and Expenditures for Public Elementary and Secondary Education*, 1972-73 through 1975-76. Conversion to 1978-79 dollars was based on the PICNR Index (see appendix F, table F-5 for details).

**Table 42.—Expenditures for interest by public elementary and secondary school systems, with projections: United States, 1968-69 to 1988-89**

**(In millions)**

| Year | Total interest including payments to school-housing authorities or similar agencies | |
|---|---|---|
| | Current dollars | 1978-79 dollars |
| 1968-69[1] | $1,000 | $2,132 |
| 1969-70[2] | 1,171 | 2,333 |
| 1970-71[1] | 1,300 | 2,399 |
| 1971-72[2] | 1,378 | 2,401 |
| 1972-73[3] | 1,547 | 2,528 |
| 1973-74[3] | 1,544 | 2,332 |
| 1974-75[3] | 1,737 | 2,357 |
| 1975-76[3] | 1,896 | 2,391 |
| 1976-77[3] | 1,953 | 2,290 |
| 1977-78[3] | 1,952 | 2,119 |
| **Intermediate alternative projections[4]** | | |
| 1978-79 | 2,108 | 2,108 |
| 1979-80 | ... | 2,048 |
| 1980-81 | ... | 2,010 |
| 1981-82 | ... | 1,987 |
| 1982-83 | ... | 1,966 |
| 1983-84 | ... | 1,956 |
| 1984-85 | ... | 1,953 |
| 1985-86 | ... | 1,960 |
| 1986-87 | ... | 1,980 |
| 1987-88 | ... | 2,005 |
| 1988-89 | ... | 2,036 |
| **Low alternative projections[4]** | | |
| 1978-79 | 2,108 | 2,108 |
| 1979-80 | ... | 1,999 |
| 1980-81 | ... | 1,954 |
| 1981-82 | ... | 1,935 |
| 1982-83 | ... | 1,915 |
| 1983-84 | ... | 1,901 |
| 1984-85 | ... | 1,897 |
| 1985-86 | ... | 1,904 |
| 1986-87 | ... | 1,925 |
| 1987-88 | ... | 1,953 |
| 1988-89 | ... | 1,986 |
| **High alternative projections[4]** | | |
| 1978-79 | 2,108 | 2,108 |
| 1979-80 | ... | 2,001 |
| 1980-81 | ... | 1,959 |
| 1981-82 | ... | 1,948 |
| 1983-83 | ... | 1,942 |
| 1983-84 | ... | 1,941 |
| 1984-85 | ... | 1,950 |
| 1985-86 | ... | 1,972 |
| 1986-87 | ... | 2,006 |
| 1987-88 | ... | 2,048 |
| 1988-89 | ... | 2,095 |

[1]Estimates furnished by State education departments.
[2]From *Statistics of State School Systems*.
[3]From *Revenues and Expenditures for Public Elementary and Secondary Education*.
[4]For methodological details, see appendix A, section A-4. For primary assumptions made, see appendix B.

NOTE.—Data are for 50 States and the District of Columbia for all years.

SOURCES: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: (1) *Statistics of State School Systems*; (2) *Statistics of Public Schools*; (3) *Revenues and Expenditures for Public Elementary and Secondary Education*. Conversion to 1978-79 dollars was based on the Consumer Price Index (see appendix F, table F-5 for details).

**Table 43.—Expenditures from current funds and total current expenditures (1978-79 dollars) by institutions of higher education, with alternative projections: United States, 1968-69 to 1988-89**

**(In billions of 1978-79 dollars)**

| Year and control (1) | Educational and general: Student education[1] (2) | Research[2] (3) | Scholarships and fellowships[3] (4) | Public service[4] (5) | Auxiliary enterprises[5] (6) | Hospitals and independent operations[6] (7) | Mandatory transfers[7] (8) | Total current expenditures (cols. 2 thru 7 less col. 8) (9) |
|---|---|---|---|---|---|---|---|---|
| 1968-69: | | | | | | | | |
| Total | $20.8 | $3.9 | $1.6 | $1.9 | $4.9 | $2.5 | $1.1 | $34.4 |
| Public | 13.4 | 2.3 | .7 | 1.4 | 2.8 | 1.3 | .8 | 21.2 |
| Nonpublic | 7.4 | 1.6 | .9 | .5 | 2.1 | 1.2 | .3 | 13.2 |
| 1969-70: | | | | | | | | |
| Total | 22.6 | 3.9 | 1.8 | 2.1 | 5.0 | 2.7 | 1.3 | 36.9 |
| Public | 14.9 | 2.3 | .8 | 1.6 | 2.9 | 1.4 | 1.0 | 23.0 |
| Nonpublic | 7.7 | 1.6 | 1.0 | .5 | 2.1 | 1.3 | .3 | 13.9 |
| 1970-71: | | | | | | | | |
| Total | 24.3 | 3.8 | 1.9 | 2.2 | 5.2 | 2.9 | 1.1 | 39.3 |
| Public | 16.3 | 2.3 | .9 | 1.6 | 3.1 | 1.6 | .8 | 25.1 |
| Nonpublic | 8.0 | 1.5 | 1.0 | .6 | 2.1 | 1.3 | .3 | 14.2 |
| 1971-72: | | | | | | | | |
| Total | 25.9 | 3.7 | 2.0 | 2.3 | 5.3 | 3.2 | 1.1 | 41.5 |
| Public | 17.6 | 2.2 | 1.0 | 1.7 | 3.2 | 1.7 | .8 | 26.7 |
| Nonpublic | 8.3 | 1.5 | 1.0 | .6 | 2.1 | 1.5 | .3 | 14.8 |
| 1972-73: | | | | | | | | |
| Total | 27.6 | 3.8 | 2.1 | 2.3 | 5.3 | 3.5 | 1.1 | 43.6 |
| Public | 18.9 | 2.4 | 1.0 | 1.7 | 3.2 | 1.8 | .8 | 28.3 |
| Nonpublic | 8.7 | 1.4 | 1.1 | .6 | 2.1 | 1.7 | .3 | 15.3 |
| 1973-74: | | | | | | | | |
| Total | 28.2 | 3.6 | 2.0 | 2.3 | 5.3 | 3.6 | 1.1 | 43.9 |
| Public | 19.5 | 2.3 | 1.0 | 1.8 | 3.2 | 2.0 | .8 | 29.0 |
| Nonpublic | 8.7 | 1.3 | 1.0 | .5 | 2.1 | 1.6 | .3 | 14.9 |
| 1974-75: | | | | | | | | |
| Total | 28.3 | 4.1 | 2.0 | 2.1 | 5.4 | 4.6 | 1.3 | 45.1 |
| Public | 19.9 | 2.7 | 1.0 | 1.7 | 3.4 | 2.5 | .9 | 30.2 |
| Nonpublic | 8.4 | 1.4 | 1.0 | .4 | 2.0 | 2.1 | .4 | 14.9 |
| 1975-76: | | | | | | | | |
| Total | 29.5 | 4.1 | 2.0 | 2.2 | 5.5 | 4.8 | 1.2 | 46.8 |
| Public | 20.9 | 2.7 | 1.0 | 1.7 | 3.5 | 2.6 | .8 | 31.5 |
| Nonpublic | 8.6 | 1.4 | 1.0 | .5 | 2.0 | 2.2 | .4 | 15.3 |
| 1976-77: | | | | | | | | |
| Total | 30.2 | 4.2 | 2.1 | 2.3 | 5.7 | 5.4 | 1.2 | 48.5 |
| Public | 21.3 | 2.7 | 1.0 | 1.8 | 3.6 | 3.0 | .8 | 32.6 |
| Nonpublic | 8.9 | 1.5 | 1.1 | .5 | 2.1 | 2.4 | .4 | 15.9 |
| 1977-78: | | | | | | | | |
| Total | 31.1 | 4.3 | 2.0 | 2.3 | 5.8 | 4.8 | 1.2 | 49.1 |
| Public | 22.0 | 2.8 | 0.9 | 1.8 | 3.7 | 2.4 | .8 | 32.8 |
| Nonpublic | 9.1 | 1.5 | 1.1 | .5 | 2.1 | 2.4 | .4 | 16.3 |
| **Intermediate alternative projections[8]** | | | | | | | | |
| 1978-79: | | | | | | | | |
| Total | 31.7 | 4.3 | 2.0 | 2.2 | 5.8 | 5.2 | 1.2 | 49.9 |
| Public | 22.3 | 2.9 | .9 | 1.7 | 3.7 | 2.6 | .8 | 33.3 |
| Nonpublic | 9.4 | 1.4 | 1.1 | .5 | 2.1 | 2.6 | .4 | 16.6 |
| 1979-80: | | | | | | | | |
| Total | 31.9 | 4.2 | 1.9 | 2.3 | 5.6 | 5.6 | 1.2 | 50.1 |
| Public | 22.6 | 2.9 | 0.8 | 1.8 | 3.6 | 2.8 | .8 | 33.7 |
| Nonpublic | 9.3 | 1.3 | 1.1 | .5 | 2.0 | 2.8 | .4 | 16.4 |

See footnotes at end of table.

**Table 43.—Expenditures from current funds and total current expenditures (1978-79 dollars) by institutions of higher education, with alternative projections: United States, 1968-69 to 1988-89—Cont.**

**(In billions of 1978-79 dollars)**

| Year and control (1) | Educational and general: Student education[1] (2) | Research[2] (3) | Scholarships and fellowships[3] (4) | Public service[4] (5) | Auxiliary enterprises[5] (6) | Hospitals and independent operations[6] (7) | Mandatory transfers[7] (8) | Total current expenditures (cols. 2 thru 7 less col. 8) (9) |
|---|---|---|---|---|---|---|---|---|
| 1980-81: | | | | | | | | |
| Total | $31.9 | $4.2 | $1.8 | $2.3 | $5.5 | $5.9 | $1.2 | $50.4 |
| Public | 22.7 | 2.9 | .8 | 1.8 | 3.6 | 3.0 | .8 | 34.0 |
| Nonpublic | 9.2 | 1.3 | 1.0 | .5 | 1.9 | 2.9 | .4 | 16.4 |
| 1981-82: | | | | | | | | |
| Total | 32.1 | 4.2 | 1.8 | 2.3 | 5.6 | 6.2 | 1.2 | 51.0 |
| Public | 22.9 | 2.9 | .8 | 1.8 | 3.7 | 3.2 | .8 | 34.5 |
| Nonpublic | 9.2 | 1.3 | 1.0 | .5 | 1.9 | 3.0 | .4 | 16.5 |
| 1982-83: | | | | | | | | |
| Total | 32.9 | 4.2 | 1.7 | 2.3 | 5.7 | 6.4 | 1.2 | 52.1 |
| Public | 23.5 | 3.0 | .7 | 1.8 | 3.8 | 3.3 | .8 | 35.4 |
| Nonpublic | 9.4 | 1.2 | 1.0 | .5 | 1.9 | 3.1 | .4 | 16.7 |
| 1983-84: | | | | | | | | |
| Total | 33.7 | 4.3 | 1.7 | 2.3 | 5.7 | 6.5 | 1.1 | 53.0 |
| Public | 24.1 | 3.1 | .7 | 1.8 | 3.8 | 3.4 | .7 | 36.1 |
| Nonpublic | 9.6 | 1.2 | 1.0 | .5 | 1.9 | 3.1 | .4 | 16.9 |
| 1984-85: | | | | | | | | |
| Total | 34.2 | 4.3 | 1.7 | 2.3 | 5.6 | 6.7 | 1.1 | 53.7 |
| Public | 24.5 | 3.1 | .7 | 1.8 | 3.8 | 3.5 | .7 | 36.7 |
| Nonpublic | 9.7 | 1.2 | 1.0 | .5 | 1.8 | 3.2 | .4 | 17.0 |
| 1985-86: | | | | | | | | |
| Total | 34.6 | 4.4 | 1.7 | 2.2 | 5.7 | 6.9 | 1.1 | 54.4 |
| Public | 24.9 | 3.2 | .7 | 1.7 | 3.9 | 3.6 | .7 | 37.3 |
| Nonpublic | 9.7 | 1.2 | 1.0 | .5 | 1.8 | 3.3 | .4 | 17.1 |
| 1986-87: | | | | | | | | |
| Total | 35.3 | 4.5 | 1.6 | 2.1 | 5.8 | 7.0 | 1.1 | 55.3 |
| Public | 25.4 | 3.3 | .6 | 1.7 | 4.0 | 3.7 | .7 | 38.0 |
| Nonpublic | 9.9 | 1.2 | 1.0 | .4 | 1.8 | 3.3 | .4 | 17.3 |
| 1987-88: | | | | | | | | |
| Total | 36.2 | 4.6 | 1.6 | 2.1 | 5.9 | 7.2 | 1.1 | 56.5 |
| Public | 26.1 | 3.4 | .6 | 1.7 | 4.1 | 3.8 | .7 | 38.9 |
| Nonpublic | 10.1 | 1.2 | 1.0 | .4 | 1.8 | 3.4 | .4 | 17.6 |
| 1988-89: | | | | | | | | |
| Total | 37.1 | 4.6 | 1.6 | 2.1 | 5.9 | 7.3 | 1.1 | 57.6 |
| Public | 26.8 | 3.4 | .6 | 1.7 | 4.1 | 3.9 | .7 | 39.8 |
| Nonpublic | 10.3 | 1.2 | 1.0 | .4 | 1.8 | 3.4 | .4 | 17.8 |
| **Low alternative projections[8]** | | | | | | | | |
| 1978-79: | | | | | | | | |
| Total | 30.6 | 4.3 | 2.0 | 2.1 | 5.8 | 5.2 | 1.2 | 48.7 |
| Public | 21.2 | 2.9 | .9 | 1.6 | 3.7 | 2.6 | .8 | 32.1 |
| Nonpublic | 9.4 | 1.4 | 1.1 | .5 | 2.1 | 2.6 | .4 | 16.6 |
| 1979-80: | | | | | | | | |
| Total | 30.3 | 4.1 | 1.9 | 2.2 | 5.6 | 5.7 | 1.2 | 48.4 |
| Public | 21.1 | 2.8 | .8 | 1.7 | 3.6 | 2.9 | .8 | 32.1 |
| Nonpublic | 9.2 | 1.3 | 1.1 | .5 | 2.0 | 2.8 | .4 | 16.3 |
| 1980-81: | | | | | | | | |
| Total | 29.5 | 4.0 | 1.8 | 2.2 | 5.4 | 6.0 | 1.1 | 47.6 |
| Public | 20.5 | 2.8 | .8 | 1.7 | 3.5 | 3.1 | .7 | 31.5 |
| Nonpublic | 9.0 | 1.2 | 1.0 | .5 | 1.9 | 2.9 | .4 | 16.1 |

See footnotes at end of table.

**Table 43.—Expenditures from current funds and total current expenditures (1978-79 dollars) by institutions of higher education, with alternative projections: United States, 1968-69 to 1988-89—Cont.**

**(In billions of 1978-79 dollars)**

| Year and control (1) | Educational and general: Student education[1] (2) | Research[2] (3) | Scholarships and fellowships[3] (4) | Public service[4] (5) | Auxiliary enterprises[5] (6) | Hospitals and independent operations[6] (7) | Mandatory transfers[7] (8) | Total current expenditures (cols. 2 thru 7 less col. 8) (9) |
|---|---|---|---|---|---|---|---|---|
| 1981-82: | | | | | | | | |
| Total | $29.4 | $4.0 | $1.7 | $2.2 | $5.4 | $6.2 | $1.1 | $47.9 |
| Public | 20.5 | 2.8 | .7 | 1.7 | 3.6 | 3.2 | .7 | 31.8 |
| Nonpublic | 8.9 | 1.2 | 1.0 | .5 | 1.8 | 3.0 | .4 | 16.1 |
| 1982-83: | | | | | | | | |
| Total | 29.7 | 4.1 | 1.7 | 2.2 | 5.5 | 6.4 | 1.1 | 48.6 |
| Public | 20.6 | 2.9 | .7 | 1.7 | 3.7 | 3.3 | .7 | 32.3 |
| Nonpublic | 9.1 | 1.2 | 1.0 | .5 | 1.8 | 3.1 | .4 | 16.3 |
| 1983-84: | | | | | | | | |
| Total | 29.9 | 4.3 | 1.7 | 2.2 | 5.6 | 6.7 | 1.1 | 49.2 |
| Public | 20.7 | 3.1 | .7 | 1.7 | 3.8 | 3.5 | .7 | 32.7 |
| Nonpublic | 9.2 | 1.2 | 1.0 | .5 | 1.8 | 3.2 | .4 | 16.5 |
| 1984-85: | | | | | | | | |
| Total | 30.0 | 4.3 | 1.7 | 2.2 | 5.6 | 6.9 | 1.1 | 49.3 |
| Public | 20.5 | 3.1 | .7 | 1.7 | 3.8 | 3.6 | .7 | 32.5 |
| Nonpublic | 9.5 | 1.2 | 1.0 | .5 | 1.8 | 3.3 | .4 | 16.8 |
| 1985-86: | | | | | | | | |
| Total | 29.7 | 4.3 | 1.5 | 2.0 | 5.6 | 7.0 | 1.1 | 49.1 |
| Public | 20.1 | 3.1 | .6 | 1.6 | 3.8 | 3.7 | .7 | 32.2 |
| Nonpublic | 9.6 | 1.2 | .9 | .4 | 1.8 | 3.3 | .4 | 16.9 |
| 1986-87: | | | | | | | | |
| Total | 29.4 | 4.4 | 1.5 | 2.0 | 5.6 | 7.2 | 1.1 | 49.0 |
| Public | 19.8 | 3.2 | .6 | 1.6 | 3.8 | 3.8 | .7 | 32.1 |
| Nonpublic | 9.6 | 1.2 | .9 | .4 | 1.8 | 3.4 | .4 | 16.9 |
| 1987-88: | | | | | | | | |
| Total | 29.4 | 4.5 | 1.5 | 2.0 | 5.8 | 7.2 | 1.1 | 49.3 |
| Public | 19.8 | 3.3 | .6 | 1.6 | 4.0 | 3.8 | .7 | 32.3 |
| Nonpublic | 9.6 | 1.2 | .9 | .4 | 1.8 | 3.4 | .4 | 17.0 |
| 1988-89: | | | | | | | | |
| Total | 29.6 | 4.5 | 1.5 | 2.0 | 5.6 | 7.4 | 1.1 | 49.5 |
| Public | 19.7 | 3.3 | .6 | 1.6 | 3.9 | 3.9 | .7 | 32.3 |
| Nonpublic | 9.9 | 1.2 | .9 | .4 | 1.7 | 3.5 | .4 | 17.2 |
| **High alternative projections[8]** | | | | | | | | |
| 1978-79: | | | | | | | | |
| Total | 31.7 | 4.3 | 2.0 | 2.3 | 5.8 | 5.2 | 1.2 | 50.0 |
| Public | 22.3 | 2.9 | .9 | 1.8 | 3.7 | 2.6 | .8 | 33.4 |
| Nonpublic | 9.4 | 1.4 | 1.1 | .5 | 2.1 | 2.6 | .4 | 16.6 |
| 1979-80: | | | | | | | | |
| Total | 32.4 | 4.1 | 2.0 | 2.4 | 5.6 | 5.6 | 1.2 | 51.1 |
| Public | 22.9 | 2.8 | .9 | 1.9 | 3.6 | 2.8 | .8 | 34.3 |
| Nonpublic | 9.5 | 1.3 | 1.1 | .5 | 2.0 | 2.8 | .4 | 16.8 |
| 1980-81: | | | | | | | | |
| Total | 32.8 | 4.1 | 2.0 | 2.5 | 5.6 | 5.9 | 1.2 | 51.7 |
| Public | 23.2 | 2.8 | .9 | 2.0 | 3.6 | 3.0 | .8 | 34.7 |
| Nonpublic | 9.6 | 1.3 | 1.1 | .5 | 2.0 | 2.9 | .4 | 17.0 |
| 1981-82: | | | | | | | | |
| Total | 33.3 | 4.2 | 2.1 | 2.5 | 5.8 | 6.1 | 1.2 | 52.7 |
| Public | 23.6 | 2.9 | .9 | 2.0 | 3.8 | 3.1 | .8 | 35.5 |
| Nonpublic | 9.7 | 1.3 | 1.2 | .5 | 2.0 | 3.0 | .4 | 17.2 |

See footnotes at end of table.

**Table 43.—Expenditures from current funds and total current expenditures (1978-79 dollars) by institutions of higher education, with alternative projections: United States, 1968-69 to 1988-89—Cont.**

**(In billions of 1978-79 dollars)**

| Year and control (1) | Educational and general: Student education[1] (2) | Research[2] (3) | Scholarships and fellowships[3] (4) | Public service[4] (5) | Auxiliary enterprises[5] (6) | Hospitals and independent operations[6] (7) | Mandatory transfers[7] (8) | Total current expenditures (cols. 2 thru 7 less col. 8) (9) |
|---|---|---|---|---|---|---|---|---|
| 1982-83: | | | | | | | | |
| Total | $34.3 | $4.3 | $2.0 | $2.7 | $5.8 | $6.3 | $1.2 | $54.2 |
| Public | 24.4 | 3.0 | .8 | 2.1 | 3.8 | 3.3 | .8 | 36.6 |
| Nonpublic | 9.9 | 1.3 | 1.2 | .6 | 2.0 | 3.0 | .4 | 17.6 |
| 19..-84: | | | | | | | | |
| Total | 35.3 | 4.3 | 2.0 | 2.7 | 5.9 | 6.5 | 1.2 | 55.6 |
| Public | 25.1 | 3.1 | .8 | 2.1 | 3.9 | 3.4 | .8 | 37.7 |
| Nonpublic | 10.2 | 1.2 | 1.2 | .6 | 2.0 | 3.1 | .4 | 17.9 |
| 1984-85: | | | | | | | | |
| Total | 36.0 | 4.3 | 2.0 | 2.7 | 6.0 | 6.7 | 1.2 | 56.6 |
| Public | 25.7 | 3.1 | .8 | 2.1 | 4.0 | 3.5 | .8 | 38.5 |
| Nonpublic | 10.3 | 1.2 | 1.2 | .6 | 2.0 | 3.2 | .4 | 18.1 |
| 1985-86: | | | | | | | | |
| Total | 36.7 | 4.4 | 2.0 | 2.8 | 6.0 | 6.9 | 1.2 | 57.5 |
| Public | 26.2 | 3.2 | .8 | 2.2 | 4.0 | 3.6 | .8 | 39.2 |
| Nonpublic | 10.5 | 1.2 | 1.2 | .6 | 2.0 | 3.3 | .4 | 18.3 |
| 1986-87: | | | | | | | | |
| Total | 37.6 | 4.6 | 2.0 | 2.8 | 6.1 | 7.0 | 1.2 | 58.8 |
| Public | 26.9 | 3.3 | .8 | 2.2 | 4.1 | 3.7 | .8 | 40.2 |
| Nonpublic | 10.7 | 1.3 | 1.2 | .6 | 2.0 | 3.3 | .4 | 18.6 |
| 1987-88: | | | | | | | | |
| Total | 38.6 | 4.7 | 2.0 | 2.8 | 6.3 | 7.1 | 1.2 | 60.2 |
| Public | 27.7 | 3.4 | .8 | 2.2 | 4.2 | 3.7 | .8 | 41.3 |
| Nonpublic | 10.9 | 1.3 | 1.2 | .6 | 2.1 | 3.4 | .4 | 18.9 |
| 1988-89: | | | | | | | | |
| Total | 39.7 | 4.8 | 2.0 | 2.8 | 6.4 | 7.2 | 1.2 | 61.5 |
| Public | 28.5 | 3.5 | .8 | 2.2 | 4.3 | 3.8 | .8 | 42.3 |
| Nonpublic | 11.2 | 1.3 | 1.2 | .6 | 2.1 | 3.4 | .4 | 19.2 |

[1]Includes instruction, academic support, libraries, institutional support, student services, and operation and maintenance of the plant. These are the items most nearly comparable to "student education" expenditures reported prior to 1974-75.

[2]Includes all sponsored research and other separately budgeted research with exception of Federally funded research and development centers which are included under "independent operations."

[3]Moneys given in the form of outright grants and trainee stipends to individuals enrolled in formal coursework, either for credit or not. Includes aid in the form of tuition or fee remissions. Prior to 1974-75, this category was entitled "student aid" and was not an educational and general item.

[4]Includes all expenditures for public service, activities established primarily to provide noninstructional services benefial to groups external to the institution, such as seminars and projects provided to the community. Includes expenditures for cooperative extension services. Includes mandatory transfers from educational general items. Public service appears to be somewhat comparable to expenditures previously grouped under "related activities."

[5]Includes residence halls, food services, college stores, and intercollegiate athletics. Includes mandatory transfers from auxiliary enterprises.

[6]Includes expenditures for hospitals and for "independent operations" which are generally limited to expenditures of federally funded research and development centers. Includes mandatory transfers from hospitals and independent operations.

[7]Mandatory transfers from current funds are those that must be made to fulfill a binding legal obligation of the institution. Includes debt-service provisions relating to academic buildings, including amounts set aside for debt retirement and interest, and required provisions for renewal and replacement to the extent not financed from other sources.

[8]For methodological details, see appendix A, section A-4. For primary assumptions made, see appendix B, table B-5.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals. Conversion to 1978-79 dollars was based on the Consumer Price Index (see appendix F, table F-5 for details).

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication: *Financial Statistics of Institutions of Higher Education.*

**Table 44.—Expenditures from current funds and total current expenditures (current dollars) by institutions of higher education: United States, 1968-69 to 1978-79**

**(In billions of current, unadjusted dollars)**

| Year and control (1) | Educational and general | | | | Auxiliary enterprises[3] (6) | Hospitals and independent operations[4] (7) | Mandatory transfers[5] (8) | Total current expenditures (cols. 2 thru 7 less col. 8) (9) |
|---|---|---|---|---|---|---|---|---|
| | Student education[1] (2) | Research[2] (3) | Scholarships and fellowships[3] (4) | Public service[4] (5) | | | | |
| 1968-69: | | | | | | | | |
| Total | $10.7 | $2.1 | $0.9 | $1.0 | $2.5 | $1.3 | $0.6 | $17.9 |
| Public | 6.9 | 1.2 | .4 | .8 | 1.4 | .7 | .4 | 11.0 |
| Nonpublic | 3.8 | .9 | .5 | .2 | 1.1 | .6 | .2 | 6.9 |
| 1969-70: | | | | | | | | |
| Total | 12.4 | 2.2 | 1.0 | 1.2 | 2.8 | 1.5 | .8 | 20.3 |
| Public | 8.2 | 1.3 | .5 | .9 | 1.6 | .8 | .6 | 12.7 |
| Nonpublic | 4.2 | .9 | .5 | .3 | 1.2 | .7 | .2 | 7.6 |
| 1970-71: | | | | | | | | |
| Total | 14.2 | 2.2 | 1.1 | 1.3 | 3.0 | 1.6 | .6 | 22.8 |
| Public | 9.5 | 1.3 | .5 | 1.0 | 1.8 | .9 | .4 | 14.6 |
| Nonpublic | 4.7 | .9 | .6 | .3 | 1.2 | .7 | .2 | 8.2 |
| 1971-72: | | | | | | | | |
| Total | 15.5 | 2.3 | 1.2 | 1.4 | 3.2 | 1.9 | .6 | 24.9 |
| Public | 10.5 | 1.4 | .6 | 1.0 | 1.9 | 1.0 | .4 | 16.0 |
| Nonpublic | 5.0 | .9 | .6 | .4 | 1.3 | .9 | .2 | 8.9 |
| 1972-73: | | | | | | | | |
| Total | 17.2 | 2.4 | 1.4 | 1.5 | 3.3 | 2.2 | .7 | 27.3 |
| Public | 11.8 | 1.5 | .7 | 1.1 | 2.0 | 1.1 | .5 | 17.7 |
| Nonpublic | 5.4 | .9 | .7 | .4 | 1.3 | 1.1 | .2 | 9.6 |
| 1973-74: | | | | | | | | |
| Total | 19.2 | 2.5 | 1.4 | 1.6 | 3.6 | 2.4 | .8 | 29.9 |
| Public | 13.3 | 1.6 | .7 | 1.2 | 2.2 | 1.3 | .6 | 19.7 |
| Nonpublic | 5.9 | .9 | .7 | .4 | 1.4 | 1.1 | .2 | 10.2 |
| 1974-75: | | | | | | | | |
| Total | 21.4 | 3.1 | 1.5 | 1.6 | 4.1 | 3.4 | 1.0 | 34.1 |
| Public | 15.1 | 2.0 | .7 | 1.3 | 2.6 | 1.8 | .7 | 22.8 |
| Nonpublic | 6.3 | 1.1 | .8 | .3 | 1.5 | 1.6 | .3 | 11.3 |
| 1975-76: | | | | | | | | |
| Total | 23.9 | 3.3 | 1.6 | 1.8 | 4.5 | 3.8 | 1.0 | 37.9 |
| Public | 16.9 | 2.2 | .8 | 1.4 | 2.8 | 2.1 | .7 | 25.5 |
| Nonpublic | 7.0 | 1.1 | .8 | .4 | 1.7 | 1.7 | .3 | 12.4 |
| 1976-77: | | | | | | | | |
| Total | 25.9 | 3.6 | 1.8 | 1.9 | 4.9 | 4.6 | 1.1 | 41.5 |
| Public | 18.3 | 2.4 | .9 | 1.5 | 3.1 | 2.6 | .7 | 27.9 |
| Nonpublic | 7.6 | 1.2 | .9 | .4 | 1.8 | 2.0 | .4 | 13.6 |
| 1977-78: | | | | | | | | |
| Total | 28.4 | 3.9 | 1.8 | 2.1 | 5.3 | 4.5 | 1.1 | 44.9 |
| Public | 20.1 | 2.6 | .8 | 1.6 | 3.3 | 2.2 | .8 | 30.0 |
| Nonpublic | 8.3 | 1.3 | 1.0 | .4 | 1.9 | 2.2 | .4 | 14.9 |

[1]Includes instruction, academic support, libraries, institutional support, student services and operation and maintenance of the plant. These are the items most nearly comparable to "student education" expenditures reported prior to 1974-75.

[2]Includes all sponsored research and other separately budgeted research with exception of federally funded research and development centers which are included under "independent operations."

[3]Moneys given in the form of outright grants and trainee stipends to individuals enrolled in formal coursework, either for credit or not. Includes aid in the form of tuition or fee remissions. Prior to 1974-75, this category was entitled "student aid" and was not an educational and general item.

[4]Includes all expenditures for public service, activities established primarily to provide noninstructional services beneficial to groups external to the institution, such as seminars and projects provided to the community. Includes expenditures for cooperative extension services. Includes mandatory transfers from educational general items. Public service appears to be somewhat comparable to expenditures previously grouped under "related activities."

[5]Includes residence halls, food services, college stores, and intercollegiate athletics. Includes mandatory transfers from auxiliary enterprises.

[6]Includes expenditures for hospitals and for "independent operations" which are generally limited to expenditures of federally funded research and development centers. Includes mandatory transfers from hospitals and independent operations.

[7]Mandatory transfers from current funds are those that must be made to fulfill a binding legal obligation of the institution. Includes debt-service provisions relating to academic buildings, including amounts set aside for debt retirement and interest, and required provisions for renewal and replacement to the extent not financed from other sources.

NOTE.—Data are for 50 States and the District of Columbia for all years. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publication: *Financial Statistics of Institutions of Higher Education.*

## Table 45.—Capital outlay of institutions of higher education, with projections: United States, 1968-69 to 1988-89

(In millions)

| Year | Total | | Public | | Nonpublic | |
|---|---|---|---|---|---|---|
| | Current dollars | 1978-79 dollars | Current dollars | 1978-79 dollars | Current dollars | 1978-79 dollars |
| 1968-69 | $4,057 | $9,568 | $2,978 | $7,023 | $1,079 | $2,545 |
| 1969-70 | 4,332 | 9,361 | 3,066 | 6,625 | 1,266 | 2,736 |
| 1970-71 | 4,344 | 8,715 | 3,147 | 6,314 | 1,197 | 2,401 |
| 1971-72 | 4,336 | 8,139 | 3,156 | 5,924 | 1,180 | 2,215 |
| 1972-73 | 4,092 | 7,270 | 3,045 | 5,410 | 1,047 | 1,860 |
| 1973-74 | 4,440 | 7,016 | 3,276 | 5,177 | 1,164 | 1,839 |
| 1974-75 | 4,798 | 6,285 | 3,474 | 4,551 | 1,324 | 1,734 |
| 1975-76 | 4,809 | 5,975 | 3,612 | 4,488 | 1,197 | 1,487 |
| 1976-77 | 4,819 | 5,734 | 3,502 | 4,166 | 1,318 | 1,568 |
| 1977-78 | 4,627 | 5,101 | 3,422 | 3,772 | 1,205 | 1,329 |
| **Intermediate alternative projections[1]** | | | | | | |
| 1978-79 | 5,037 | 5,037 | 3,712 | 3,712 | 1,325 | 1,325 |
| 1979-80 | ... | 5,005 | ... | 3,692 | ... | 1,313 |
| 1980-81 | ... | 4,374 | ... | 3,058 | ... | 1,316 |
| 1981-82 | ... | 4,043 | ... | 2,727 | ... | 1,316 |
| 1982-83 | ... | 3,775 | ... | 2,468 | ... | 1,308 |
| 1983-84 | ... | 3,582 | ... | 2,289 | ... | 1,293 |
| 1984-85 | ... | 3,417 | ... | 2,146 | ... | 1,272 |
| 1985-86 | ... | 3,308 | ... | 2,060 | ... | 1,248 |
| 1986-87 | ... | 3,224 | ... | 2,001 | ... | 1,223 |
| 1987-88 | ... | 3,168 | ... | 1,964 | ... | 1,204 |
| 1988-89 | ... | 3,118 | ... | 1,924 | ... | 1,194 |
| **Low alternative projections[1]** | | | | | | |
| 1978-79 | 5,378 | 5,378 | 4,095 | 4,095 | 1,283 | 1,283 |
| 1979-80 | ... | 4,942 | ... | 3,670 | ... | 1,272 |
| 1980-81 | ... | 4,242 | ... | 2,967 | ... | 1,275 |
| 1981-82 | ... | 3,911 | ... | 2,636 | ... | 1,275 |
| 1982-83 | ... | 3,633 | ... | 2,366 | ... | 1,267 |
| 1983-84 | ... | 3,458 | ... | 2,205 | ... | 1,253 |
| 1984-85 | ... | 3,384 | ... | 2,152 | ... | 1,232 |
| 1985-86 | ... | 3,271 | ... | 2,062 | ... | 1,209 |
| 1986-87 | ... | 3,086 | ... | 1,901 | ... | 1,185 |
| 1987-88 | ... | 2,957 | ... | 1,791 | ... | 1,166 |
| 1988-89 | ... | 2,929 | ... | 1,772 | ... | 1,157 |
| **High alternative projections[1]** | | | | | | |
| 1978-79 | 5,461 | 5,461 | 4,095 | 4,095 | 1,366 | 1,366 |
| 1979-80 | ... | 5,297 | ... | 3,862 | ... | 1,435 |
| 1980-81 | ... | 4,778 | ... | 3,305 | ... | 1,473 |
| 1981-82 | ... | 4,572 | ... | 3,063 | ... | 1,509 |
| 1982-83 | ... | 4,435 | ... | 2,899 | ... | 1,536 |
| 1983-84 | ... | 4,377 | ... | 2,821 | ... | 1,556 |
| 1984-85 | ... | 4,342 | ... | 2,775 | ... | 1,567 |
| 1985-86 | ... | 4,358 | ... | 2,784 | ... | 1,574 |
| 1986-87 | ... | 4,393 | ... | 2,814 | ... | 1,579 |
| 1987-88 | ... | 4,458 | ... | 2,867 | ... | 1,591 |
| 1988-89 | ... | 4,529 | ... | 2,919 | ... | 1,610 |

For methodological details, see appendix A, section A-4. For primary assumptions made, see appendix B.

SOURCE: Expenditure data from U.S. Department of Health, Education and Welfare, National Center for Education Statistics publication: *Financial Statistics of Institutions of Higher Education*. Conversion to 1978-79 dollars based on PICNR index (see appendix F, table F-5 for details).

# Chapter V
# AVERAGE STUDENT CHARGES

Receipts from student charges are an important source of revenue for both public and private colleges and universities. Private universities, other 4-year institutions and 2-year institutions received 28, 44, and 57 percent, respectively, of their total revenue from tuition receipts. Public universities and other 4-year institutions received 13 percent, and public 2-year institutions received 15 percent of total revenue from tuition. However, tuition has not kept pace with inflation. Average tuition decreased between 1974-75 and 1978-79 in public universities and 2-year institutions and in private 4-year and 2-year institutions, as expressed in constant 1978-79 dollars. Tuition at public 4-year institutions and private universities increased slightly when adjusted for inflation. The level of tuition is contingent upon a variety of factors which are difficult to predict, therefore, projections to 1988-89 are presented at three levels; low, intermediate, and high. A detailed explanation of the calculations used for projections is presented in appendix A, section A.5.

The estimated average charge per student for tuition, room and board (in constant 1978-79 dollars) in public institutions decreased from $2,056 in 1974-75 to $2,009 in 1978-79. Charges in 1988-89 are expected to increase to $2,024 at the low alternative, $2,063 at the intermediate alternative, and $2,132 at the high alternative levels (figure 26). Charges for tuition, room and board at private institutions fell from $4,488 ( in 1978-79 dollars) in 1974-75 to $4,477 in 1978-79. The 1988-89 average charge per student is projected to be $4,375 at the low, $4,502 at the intermediate, and $4,879 at the high alternative levels (figure 26). Some average charges for room and board have not exhibited any discernible trends in recent years and thus charges have been projected to hold constant (in constant 1978-79 dollars) at the unweighted average of the last five observations, with no alternatives.

The amount charged for tuition depends on several factors. In the public sector, the amout of State support offered to the institution helps determine the amount of tuition charged. Tuition comprises between 2 and 30 percent of total revenue at public universities in the 50 States. This wide range is indicative of the varying dependence on tuition as a source of revenue in the public sector. Future changes in the amount of support to higher education will directly affect tuition costs.

The level of tuition at private institutions is similarly influenced by the amount of financial support available from other sources. But one factor that tends to hold down tuition at private schools is competition with the public sector. The "tuition gap" or difference between public and private tuition has been approximately $2,300 for the past five years when tuition is expressed in constant 1978-79 dollars. Projections of tuition at the high and intermediate alternative levels indicate the tuition gap will remain at similar levels through 1988-89.

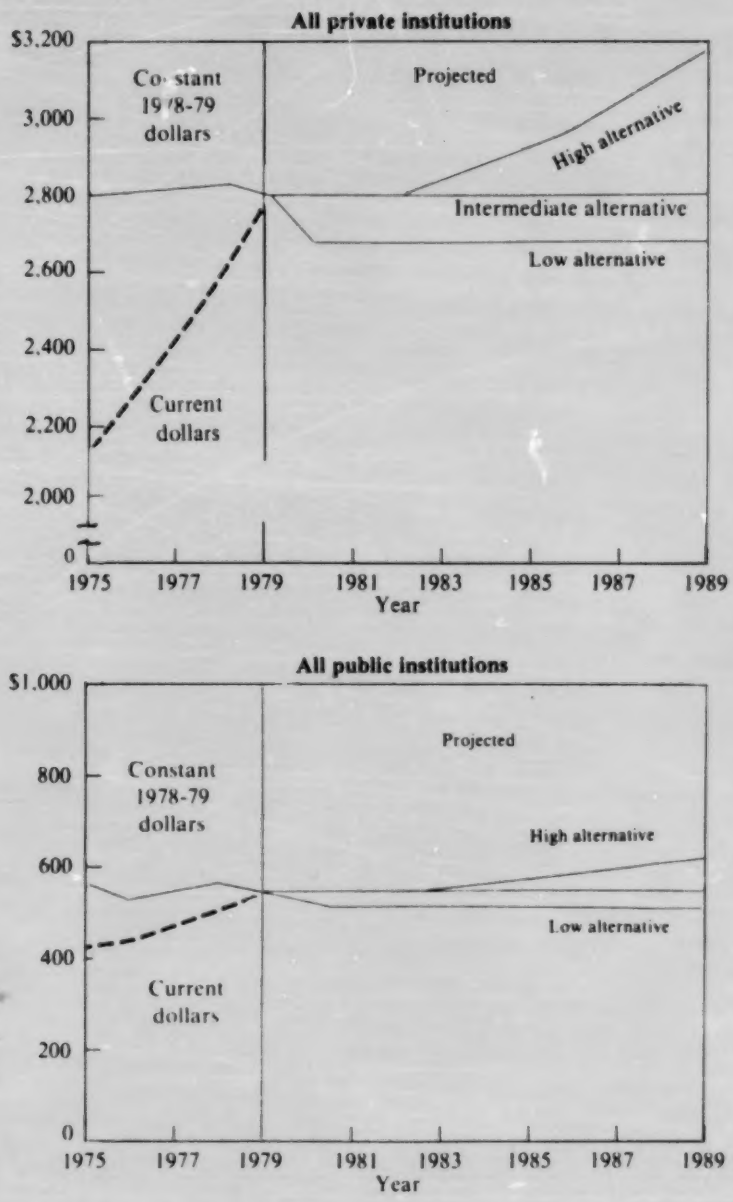
The average charges for tuition and required fees at public controlled universities decreased from $793 in 1974-75 to $770 in 1978-79. Only the high alternative projections anticipate an increase in this level by 1988-89. Tuition and fees at private universities increased from $3,459 in 1974-75 to $3,643 in 1978-79. By 1988-89, tuition is projected to decrease to $3,484 at the low alternative level, and increase to $4,145 at the high alternative level with the intermediate alternative remaining constant at the 1978-79 level.

Charges for dormitory rooms by publicly controlled institutions increased slightly from $655 in 1974-75 to $659 in 1978-79. Average charges for rooms at privately controlled institutions also showed an increase from $758 in 1974-75 to $780 in 1978-79. Projections of these charges for both public and pri-

vate higher education were held constant at the 1978-79 level.

Average charges for board at public colleges and universities fell from their 1974-75 level of $829 to $796 in 1978-79. Private institutions charged an average of $929 for board in 1974-75 and $904 in 1978-79. Projections of average board charges were held constant at the 1978-79 level.

**Figure 26.—Estimated average charges for tuition and required fees per full-time-equivalent student in all institutions of higher education, with alternative projections[1], by control of institution: United States, 1974-75 to 1988-89**




[1]Projections are in constant (1978-79 dollars).

Sources: Tables 46 and 47.

**Table 46.—Estimated average charges (1978-79 dollars) per full-time-equivalent student in institutions of higher education with alternative projections, by type and control of institution: United States, 1974-75 to 1988-89**

**(Charges are for the academic year and in constant 1978-79 dollars)**

| Year and control | Total tuition, board and room | | | | Tuition and required fees | | | | Board (7-day basis) | | | | Dormitory rooms | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year |
| 1974-75: | | | | | | | | | | | | | | | | |
| Public | 2,056 | 2,316 | 2,049 | 1,762 | 572 | 793 | 593 | 367 | 829 | 841 | 813 | 846 | 655 | 682 | 643 | 549 |
| Nonpublic | 4,488 | 5,376 | 4,164 | 3,415 | 2,801 | 3,459 | 2,586 | 1,809 | 929 | 1,023 | 884 | 876 | 758 | 894 | 694 | 730 |
| 1975-76: | | | | | | | | | | | | | | | | |
| Public | 2,056 | 2,388 | 2,044 | 1,712 | 535 | 793 | 579 | 303 | 859 | 897 | 816 | 871 | 662 | 698 | 649 | 538 |
| Nonpublic | 4,522 | 5,515 | 4,180 | 3,346 | 2,807 | 3,560 | 2,575 | 1,763 | 941 | 1,038 | 895 | 887 | 774 | 917 | 710 | 696 |
| 1976-77: | | | | | | | | | | | | | | | | |
| Public | 2,105 | 2,413 | 2,111 | 1,754 | 554 | 789 | 617 | 320 | 882 | 921 | 837 | 898 | 669 | 703 | 657 | 536 |
| Nonpublic | 4,552 | 5,674 | 4,173 | 3,407 | 2,812 | 3,669 | 2,556 | 1,772 | 970 | 1,079 | 916 | 931 | 770 | 926 | 701 | 704 |
| 1977-78: | | | | | | | | | | | | | | | | |
| Public | 2,079 | 2,372 | 2,105 | 1,744 | 568 | 801 | 637 | 329 | 845 | 879 | 805 | 888 | 666 | 692 | 663 | 527 |
| Nonpublic | 4,543 | 5,681 | 4,171 | 3,352 | 2,825 | 3,670 | 2,585 | 1,752 | 949 | 1,076 | 890 | 912 | 769 | 935 | 696 | 688 |
| 1978-79: | | | | | | | | | | | | | | | | |
| Public | 2,009 | 2,286 | 2,025 | 1,685 | 554 | 770 | 614 | 354 | 796 | 827 | 764 | 796 | 659 | 689 | 647 | 535 |
| Nonpublic | 4,477 | 5,604 | 4,123 | 3,344 | 2,793 | 3,643 | 2,562 | 1,764 | 904 | 1,021 | 851 | 866 | 780 | 940 | 710 | 714 |
| **Intermediate alternative projections[1]** | | | | | | | | | | | | | | | | |
| 1979-80: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1980-81: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1981-82: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1982-83: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1983-84: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |

**Table 46.—Estimated average charges (1978-79 dollars) per full-time-equivalent student in institutions of higher education with alternative projections, by type and control of institution: United States, 1974-75 to 1988-89**

**(Charges are for the academic year and in constant 1978-79 dollars)—Cont.**

| Year and control | Total tuition, board and room | | | | Tuition and required fees | | | | Board (7-day basis) | | | | Dormitory rooms | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year |
| 1984-85: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1985-86: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1986-87: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1987-88: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1988-89: | | | | | | | | | | | | | | | | |
| Public | 2,063 | 2,336 | 2,073 | 1,751 | 554 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| **Low alternative projections[1]** | | | | | | | | | | | | | | | | |
| 1979-80: | | | | | | | | | | | | | | | | |
| Public | 2,031 | 2,292 | 2,049 | 1,712 | 522 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1980-81: | | | | | | | | | | | | | | | | |
| Public | 2,031 | 2,292 | 2,049 | 1,712 | 522 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1981-82: | | | | | | | | | | | | | | | | |
| Public | 2,028 | 2,292 | 2,049 | 1,712 | 519 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1982-83: | | | | | | | | | | | | | | | | |
| Public | 2,028 | 2,292 | 2,049 | 1,712 | 519 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1983-84: | | | | | | | | | | | | | | | | |
| Public | 2,028 | 2,292 | 2,049 | 1,712 | 519 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |

**Table 46.—Estimated average charges (1978-79 dollars) per full-time-equivalent student in institutions of higher education with alternative projections, by type and control of institution: United States, 1974-75 to 1988-89**

**(Charges are for the academic year and in constant 1978-79 dollars)—Cont.**

| Year and control | Total tuition, board and room | | | | Tuition and required fees | | | | Board (7-day basis) | | | | Dormitory rooms | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year |
| 1984-85: | | | | | | | | | | | | | | | | |
| Public | 2,028 | 2,292 | 2,049 | 1,712 | 519 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1985-86: | | | | | | | | | | | | | | | | |
| Public | 2,024 | 2,292 | 2,049 | 1,712 | 515 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1986-87: | | | | | | | | | | | | | | | | |
| Public | 2,024 | 2,292 | 2,049 | 1,712 | 515 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1987-88: | | | | | | | | | | | | | | | | |
| Public | 2,024 | 2,292 | 2,049 | 1,712 | 515 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1988-89: | | | | | | | | | | | | | | | | |
| Public | 2,020 | 2,292 | 2,049 | 1,712 | 511 | 726 | 590 | 315 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,375 | 5,453 | 4,036 | 3,290 | 2,666 | 3,484 | 2,447 | 1,690 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| **High alternative projections[1]** | | | | | | | | | | | | | | | | |
| 1979-80: | | | | | | | | | | | | | | | | |
| Public | 2,066 | 2,336 | 2,073 | 1,751 | 557 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1980-81: | | | | | | | | | | | | | | | | |
| Public | 2,066 | 2,336 | 2,073 | 1,751 | 557 | 770 | 614 | 354 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1981-82: | | | | | | | | | | | | | | | | |
| Public | 2,066 | 2,337 | 2,072 | 1,753 | 557 | 771 | 613 | 356 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,502 | 5,612 | 4,151 | 3,364 | 2,793 | 3,643 | 2,562 | 1,764 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1982-83: | | | | | | | | | | | | | | | | |
| Public | 2,075 | 2,352 | 2,084 | 1,760 | 566 | 786 | 625 | 363 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,546 | 5,679 | 4,192 | 3,392 | 2,837 | 3,710 | 2,603 | 1,792 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1983-84: | | | | | | | | | | | | | | | | |
| Public | 2,084 | 2,363 | 2,093 | 1,766 | 575 | 797 | 634 | 369 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,587 | 5,733 | 4,229 | 3,417 | 2,878 | 3,764 | 2,640 | 1,817 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |

See footnotes at end of table.

**Table 46.—Estimated average charges (1978-79 dollars) per full-time-equivalent student in institutions of higher education with alternative projections, by type and control of institution: United States, 1974-75 to 1988-89**

**(Charges are for the academic year and in constant 1978-79 dollars)—Cont.**

| Year and control | Total tuition, board and room | | | | Tuition and required fees | | | | Board (7-day basis) | | | | Dormitory rooms | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year |
| 1984-85: | | | | | | | | | | | | | | | | |
| Public | 2,092 | 2,375 | 2,102 | 1,771 | 583 | 809 | 643 | 374 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,628 | 5,786 | 4,267 | 3,443 | 2,919 | 3,817 | 2,678 | 1,843 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1985-86: | | | | | | | | | | | | | | | | |
| Public | 2,100 | 2,392 | 2,116 | 1,779 | 591 | 826 | 657 | 382 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,691 | 5,868 | 4,325 | 3,483 | 2,982 | 3,899 | 2,736 | 1,883 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1986-87: | | | | | | | | | | | | | | | | |
| Public | 2,115 | 2,413 | 2,133 | 1,789 | 606 | 847 | 674 | 392 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,767 | 5,969 | 4,395 | 3,532 | 3,058 | 4,000 | 2,806 | 1,932 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1987-88: | | | | | | | | | | | | | | | | |
| Public | 2,128 | 2,432 | 2,148 | 1,797 | 619 | 866 | 689 | 400 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,835 | 6,057 | 4,457 | 3,574 | 3,126 | 4,088 | 2,868 | 1,974 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |
| 1988-89: | | | | | | | | | | | | | | | | |
| Public | 2,132 | 2,444 | 2,157 | 1,803 | 623 | 878 | 698 | 406 | 847 | 873 | 807 | 860 | 662 | 693 | 652 | 537 |
| Nonpublic | 4,879 | 6,114 | 4,497 | 3,602 | 3,170 | 4,145 | 2,908 | 2,002 | 939 | 1,047 | 887 | 894 | 770 | 922 | 702 | 706 |

[1]For methodological details, see appendix A, section A-5. For primary assumptions made, see appendix B, table B-6.

NOTE.—Tuition conversion to 1978-79 dollars was based on the All Urban Consumer Price Index (see appendix A, section 5 and Appendix F, table F-5 for details. Conversion of room and board charges to 1978-79 dollars was based on components of the All Urban CPI (appendix F, table F-7).

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: *Fall Enrollment in Higher Education*, and *Education Directory, Colleges and Universities*.

**Table 47.—Estimated average charges (current dollars) per full-time-equivalent student in institutions of higher education, by type and control of institution: United States, 1974-75 to 1978-79**

**(Charges are for the academic year and in current unadjusted dollars)**

| Year and control | Total tuition, board and room | | | | Tuition and required fees | | | | Board (7-day basis) | | | | Dormitory rooms | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year | All | University | Other 4-year | 2-year |
| 1974-75: | | | | | | | | | | | | | | | | |
| Public | 1,552 | 1,750 | 1,549 | 1,332 | 432 | 599 | 448 | 277 | 625 | 636 | 614 | 639 | 495 | 515 | 486 | 415 |
| Nonpublic | 3,392 | 4,063 | 3,147 | 2,581 | 2,117 | 2,614 | 1,954 | 1,367 | 702 | 773 | 668 | 662 | 573 | 676 | 524 | 552 |
| 1975-76: | | | | | | | | | | | | | | | | |
| Public | 1,664 | 1,933 | 1,654 | 1,386 | 433 | 642 | 469 | 245 | 695 | 726 | 660 | 705 | 536 | 565 | 525 | 435 |
| Nonpublic | 3,660 | 4,463 | 3,383 | 2,708 | 2,272 | 2,881 | 2,084 | 1,427 | 762 | 840 | 724 | 718 | 626 | 742 | 575 | 563 |
| 1976-77: | | | | | | | | | | | | | | | | |
| Public | 1,803 | 2,066 | 1,808 | 1,502 | 474 | 676 | 528 | 274 | 755 | 789 | 717 | 769 | 573 | 602 | 563 | 459 |
| Nonpublic | 3,898 | 4,859 | 3,573 | 2,917 | 2,408 | 3,142 | 2,189 | 1,517 | 831 | 924 | 784 | 797 | 659 | 793 | 600 | 603 |
| 1977-78: | | | | | | | | | | | | | | | | |
| Public | 1,900 | 2,168 | 1,924 | 1,594 | 519 | 732 | 582 | 301 | 772 | 803 | 736 | 811 | 609 | 632 | 606 | 482 |
| Nonpublic | 4,152 | 5,191 | 3,812 | 3,063 | 2,582 | 3,354 | 2,362 | 1,601 | 867 | 983 | 813 | 833 | 703 | 854 | 636 | 629 |
| 1978-79: | | | | | | | | | | | | | | | | |
| Public | 2,009 | 2,286 | 2,025 | 1,685 | 554 | 770 | 614 | 354 | 796 | 827 | 764 | 796 | 659 | 689 | 647 | 535 |
| Nonpublic | 4,477 | 5,604 | 4,123 | 3,344 | 2,793 | 3,643 | 2,562 | 1,764 | 904 | 1,021 | 851 | 866 | 780 | 940 | 710 | 714 |

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics publications: *Fall Enrollment in Higher Education*, and *Education Directory, Colleges and Universities*.

# Appendixes

# Appendix A
# METHODOLOGY

This appendix section along with appendix B describes the techniques and assumptions which underly, and greatly influence the projections shown in this publication.

This appendix section is divided into 4 major subdivisions: A-1—Enrollment, A-2—Graduates and Degrees, A-3—Teachers and Faculty, and A-4—Expenditures and Student Costs. In each of these sections, the basic methodology used was to calculate rates for recent years as a percentage of a "base" variable; for example enrollment for a given-age group as a percentage of the population in that age group for each of the last 10 years. The rate was then projected into the future and applied to projections of the "base" variable that were either previously projected by NCES or available from other sources, such as population projections from the Bureau of the Census. Projections of teachers and faculty, graduates and degrees, and expenditures are all dependent upon enrollment projections to a large extent.

The forecasting techniques primarily used are single exponential smoothing for the forecasts of constant rates and double exponential smoothing for the forecasting of linear trends. Exponential smoothing places more weight on recent observations than on earlier ones. The weights for observations decrease exponentially as one moves further into the past. As a result, the older the data, the less their influence on projections. The rate at which the weights of older observations decrease is determined by the smoothing constant selected.

For time series that can be decribed by a local constant model, single exponential smoothing was used. In single exponential smoothing, a single constant value is projected for the entire projection period in the following manner.

$$P=\alpha X_t+\alpha(1-\alpha)X_{t-1}+\alpha(1-\alpha)^2X_{t-2}+\alpha(1-\alpha)^3X_{t-3}+\ldots\ldots$$

Where

P=projected constant

$\alpha$=smoothing constant ($0 < \alpha < 1$)

$X_t$=observation for time t

The above equation illustrates that the projection is a weighted average based on exponentially decreasing weights. For high smoothing constant, weights for earlier observations decrease very rapidly. For low smoothing constant, decreases are much more moderate.

For time series that can be described by a local linear model, double exponential smoothing was used. In this method, as the name implies, the smoothed values (single exponential smoothing) are themselves smoothed. This results in a forecast for the slope of the projected line that is based primarily on an exponentially decreasing weighted average of the increments of smoothed values.

In general, the projections in this publication are based on fairly high smoothing constants. The farther apart the observations are spaced in time the more likely are changes in the underlying social, political, and economic structure. Since the observations are on an annual basis, major shifts in the underlying process are more likely to occur within the time span of just a few observations than if the observations were available on a monthly or weekly basis. As a result, the underlying process tends to be unstable from one observation to the next. Another reason for using high smoothing constants is that most of the observations are fairly accurate since most observations are population values rather than sample estimates. Therefore, large shifts tend to indi-

cate changes in the process rather than noise in the data. For those cases in which the observations were considered to be less accurate, lower smoothing constants were used.

For cases in which linear projections of past trends would lead to unrealistic results, such as more than 100 percent of an age group enrolled, non-linear models were used. In the case above, a log-linear model was employed. Rather than project the enrollment rates y, a transformation was made, namely, Z=log (100 - y). The Z values were then projected, usually by means of exponential smoothing, and the antilogs of the resultant projections were subtracted from 100 percent to obtain enrollment rate projections.

For some projections, especially in the areas of degrees and expenditures, econometric projection models were used. Econometric projection models involve the use of other independent variables (such as per capita personal income, State and local governmental expenditures, college enrollment by year enrolled, etc.) besides time. As a result, projections of these independent economic variables are required in order to make projections of the dependent variable.

The econometric models used in chapter IV and described in appendix A, section A-4 rely primarily on projections of economic series from Data Resources, Inc. Micro-Economic Forecasting Model. Estimates of the causal relationships were calculated by means of multiple regression technique.

# A-1 Enrollment

Enrollment projections were developed by means of NCES's computer program IFMOD which is an interactive forecasting model that currently has 5 components.

The first component of IFMOD is an age-specific enrollment model in which enrollment rates are projected and applied to age-specific population projections.[1] The model, which is used separately for each sex, includes the following enrollment categories: (1) nursery and kindergarten, (2) elementary grades 1-8, (3) secondary grades 9-12, (4) full-time college enrollment, and (5) part-time college enrollment. For each of these enrollment categories, enrollment rates were projected by individual ages 3 through 24 and for the age groups 25 to 29 and 30 to 34. For ages 35 and over, the enrollments themselves were projected, since the enrollments are very small compared to the population base.

Enrollments by age and age-groups from the Bureau of the Census[2] were adjusted to NCES totals in order to compute enrollment rates for 1968 through 1978. Different assumptions were made in order to produce low, intermediate, and high alternative projections of the past enrollment rates through 1988. For the assumptions upon which the alternative projections are based see appendix B.

## Nursery and Kindergarten

Nursery and kindergarten enrollments are only collected for 3-to 6-year-olds. Table A-1 shows the 1978 enrollment rates and high, intermediate, and low alternative enrollment rates for 1983 and 1988. The low alternative enrollment projections are based on constant enrollment rates, therefore, the rates remain the same throughout the projected period.

## Elementary Grades 1-8

Projections of elementary enrollment rates were only considered for ages 5 through 21. Elementary enrollments are negligible for the remaining ages. Since most elementary enrollment rates have been fluctuating at levels close to 100 percent throughout the 1968 to 1978 period, alternative enrollment rate projections were not computed. The only set of enrollment rate projections computed are based on the assumption that rates will remain constant through 1988 (table A-2). Several of the rates shown in table A-2 exceed 100 percent. This is probably due to several factors. The enrollment data by age were prorated to agree with NCES totals; and the Bureau of the Census does not revise enrollment estimates by age, but population estimates are revised regularly.

## Secondary Grades 9-12

Projections of secondary enrollment rates were only considered for ages 12 through 34. Secondary enrollments are negligible for the remaining ages. Secondary enrollment rates have fluctuated around constant levels throughout the 1968 to 1978 period.

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[1] U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *Population Estimates and Projections: Projections of the Population of the United States: 1977 to 2050*, Series P-25, No. 704, July 1977.

[2] U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *Population Characteristics, School Enrollment-Social and Economic Characteristics of Students*, 1967 through 1978, Series P-20.

Therefore, alternative enrollment rate projections were not calculated. The only set of projections computed are based on constant enrollment rates (table A-3).

## College Full-time and Part-time Enrollment

Projections of full-time and part-time college enrollments were only considered for ages 16 and over. (College enrollment is negligible for earlier ages). Three alternative enrollment projections were made, the intermediate being based on constant enrollment rate projections. Table A-4 shows enrollment rates for 1978 and low, intermediate, and high alternative projected rates for 1983 and 1988. Since the intermediate rates are constant, rates are the same for all projected years.

For the 35 and over age group, the enrollments themselves were projected. As previously stated, enrollment rates were not used for this age group. Enrollment projections for the 35 and over age group are shown in table 6, 6a, and 6b.

## Nursery and Kindergarten Enrollment by Age, Sex and Control

The second component of IFMOD projects enrollments in nursery schools and kindergarten by age and sex of student, and by control of school.

Enrollment rates by age, sex, and control were projected independently and then adjusted to agree with low, intermediate, and high nursery and kindergarten enrollment rate projections in the first component of IFMOD. Table A-5 shows actual rates for 1978 and the projected enrollment rates by age, sex, and control used to develop the projections in table 3.

## Enrollment in Elementary and Secondary Schools by Grade Group, Organizational Level, and Control

The third component of IFMOD projects public and nonpublic enrollment in elementary and secondary schools by grade group and by organizational level.

Public enrollments by age are based on enrollment rate projections for nursery and kindergarten, grade 1, elementary ungraded and special, secondary ungraded and special, and post-graduate enrollment and grade retention rate projections for grades 2 through 12. Table A-6 shows the public enrollment rates and table A-7 the public grade-retention rates for 1978 and projections for 1983 and 1988. The projected rates in tables A-6 and A-7 were used to compute the projections of enrollments in elementary and secondary schools by grade shown in table 4.

The public grade retention rates for the 6th to 7th grade and from the 8th to 9th are over 100 percent because large numbers of nonpublic elementary students change to public secondary schools at these levels. Projections of public enrollment by organizational level (table 5) are based on projections of the percentage of 7th and 8th grade students in secondary schools. From 1971 to 1977, this percentage fluctuated around 63 percent. However, in 1978 the percentage dropped to 51.7 percent. Since it appears that this drop was due to inconsistent reporting, rather than a shift in the organizational structure of schools, a low smoothing constant was used with a local linear model to project a constant 61.8 percent for 1979 through 1988.

Projections of enrollments in nonpublic schools were obtained by subtracting public enrollment projections from the total projections in the first component of IFMOD.

## College Enrollment by Sex, Attendance Status and Level Enrolled by Student and Type and Control of Institution

The fourth component of IFMOD projects enrollments in institutions of higher education by sex, attendance status, and level enrolled of student and by type and control of institution.

For each age group by attendance status and sex, the percentage that enrollment by level enrolled and type of institution was of total enrollment was projected. These projections are shown in tables A-8, and A-9, along with actual values for 1978. For all projections it was assumed that there was no enrollment in 2-year institutions at the post-baccalaureate level (graduate and first-professional).

The projected rates shown in tables A-8 and A-9 were then adjusted to agree with the projected age-specific enrollment rates in the first component of IFMOD. The adjusted rates were then applied to the projected enrollments by age-group, sex and attendance status from the first component to obtain projections by age-group, sex, attendance status, level enrolled, and type of institution.

For each enrollment category by sex, attendance status, level enrolled and type of institution, the percentage that public enrollment is of total enrollment

was projected. These projections are shown in table A-10 along with actual percentages for 1978. The projected rates shown were then applied to the projected enrollments in each enrollment category to obtain projections by control of institution.

For each enrollment category by sex and enrollment level and by type and control of institution, the percentage that graduate enrollment is of post-baccalaureate enrollment was projected. Actual graduate rates for 1978 and projections for 1983 and 1988 are shown in table A-11. The projected rates in table A-11 were then applied to projections of post-baccalaureate enrollment to obtain graduate and first-professional enrollment projections by sex and attendance status and by type and control of institution.

## Full-time-equivalent Enrollment by Type and Control of Institution and by Level Enrolled

The fifth component of IFMOD projects full-time-equivalent enrollment by type and control of institution and by level enrolled.

For each enrollment category by level enrolled and by type and control of institution, the percentage that the full-time-equivalent of part-time enrollment is of part-time enrollment was projected. Actual percentages for 1978 and projections for 1983 and 1988 are shown in table A-12.

These projected percentages were applied to projections of enrollments by level enrolled and by type and control of institution from the fourth component. The resultant projections of the full-time-equivalent of part-time enrollment were added to projections of full-time enrollment (from the previous component) to obtain projections of full-time-equivalent enrollment.

## Table A-1.—Nursery and kindergarten enrollments rates, by age and sex

| Alternative projections | Boys | | | | Girls | | | |
|---|---|---|---|---|---|---|---|---|
| | 3 years old | 4 years old | 5 years old | 6 years old | 3 years old | 4 years old | 5 years old | 6 years old |
| 1978 | 25.2 | 42.8 | 81.8 | 8.4 | 24.6 | 44.4 | 81.2 | 5.6 |
| **Low alternative** | | | | | | | | |
| 1979-1988 | 23.5 | 42.0 | 81.3 | 7.8 | 23.2 | 43.2 | 80.9 | 5.6 |
| **Intermediate alternative** | | | | | | | | |
| 1983 | 28.2 | 46.8 | 83.2 | 7.8 | 27.2 | 48.5 | 82.8 | 5.6 |
| 1988 | 32.4 | 50.9 | 84.1 | 7.8 | 30.9 | 53.1 | 83.8 | 5.6 |
| **High alternative** | | | | | | | | |
| 1983 | 32.9 | 51.5 | 85.1 | 7.8 | 31.3 | 53.8 | 84.7 | 5.6 |
| 1988 | 41.3 | 59.9 | 87.0 | 7.8 | 38.6 | 63.0 | 86.7 | 5.6 |

## Table A-2.—Elementary enrollment rates, by age and sex

| Age | Boys | | Girls | |
|---|---|---|---|---|
| | 1978 | 1979-1988 | 1978 | 1979-1988 |
| 5 | 8.7 | 8.8 | 10.6 | 10.9 |
| 6 | 90.8 | 91.6 | 93.3 | 94.0 |
| 7 | 98.4 | 99.8 | 99.2 | 100.4 |
| 8 | 101.7 | 101.8 | 101.8 | 101.8 |
| 9 | 101.4 | 101.3 | 101.9 | 101.7 |
| 10 | 97.7 | 97.3 | 97.1 | 97.4 |
| 11 | 102.5 | 103.0 | 104.2 | 103.9 |
| 12 | 98.6 | 98.7 | 98.2 | 99.1 |
| 13 | 92.5 | 92.7 | 90.2 | 90.5 |
| 14 | 23.3 | 23.4 | 14.7 | 15.0 |
| 15 | 4.7 | 4.7 | 3.0 | 2.7 |
| 16 | 1.1 | 1.1 | 0.6 | 0.5 |
| 17 | 0.3 | 0.3 | 0.1 | 0.1 |
| 18 | 0.1 | 0.1 | 0.1 | 0.1 |

## Table A-3.—Secondary enrollment rates, by age and sex

| Age | Male | | Female | |
|---|---|---|---|---|
| | 1978 | 1979-1988 | 1978 | 1979-1988 |
| 12 | 0.1 | 0.2 | 0.5 | 0.4 |
| 13 | 7.4 | 7.4 | 10.6 | 10.1 |
| 14 | 75.4 | 75.3 | 84.0 | 82.9 |
| 15 | 91.9 | 91.6 | 94.3 | 94.6 |
| 16 | 92.6 | 91.9 | 95.7 | 94.8 |
| 17 | 77.7 | 78.2 | 72.7 | 72.5 |
| 18 | 19.5 | 19.9 | 11.3 | 11.8 |
| 19 | 4.3 | 3.9 | 2.6 | 2.7 |
| 20 | 0.8 | 1.1 | 1.4 | 1.4 |
| 21 | 0.5 | 0.7 | 1.0 | 0.9 |
| 22 | 0.3 | 0.4 | 1.0 | 0.8 |
| 23 | 0.6 | 0.5 | 0.5 | 0.5 |
| 24 | 0.2 | 0.3 | 0.3 | 0.3 |
| 25-29 | 0.2 | 0.2 | 0.3 | 0.4 |

## Table A-4.—College enrollment rates, by age, sex and attendance status

| Age | | Low alternative | | Intermediate alternative | High alternative | |
|---|---|---|---|---|---|---|
| | 1978 | 1983 | 1988 | 1979-1988 | 1983 | 1988 |
| **Men full-time** | | | | | | |
| 16 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 17 | 4.2 | 3.6 | 3.5 | 4.1 | 5.2 | 6.2 |
| 18 | 26.3 | 22.6 | 21.2 | 26.7 | 29.8 | 33.3 |
| 19 | 28.2 | 26.8 | 25.4 | 28.3 | 30.9 | 33.5 |
| 20 | 23.1 | 20.6 | 19.0 | 23.5 | 26.5 | 29.8 |
| 21 | 21.7 | 19.1 | 17.6 | 22.7 | 23.1 | 24.5 |
| 22 | 14.8 | 14.2 | 14.1 | 14.4 | 14.8 | 14.8 |
| 23 | 10.6 | 9.7 | 9.3 | 11.0 | 11.6 | 12.8 |
| 24 | 9.6 | 8.9 | 8.4 | 9.9 | 10.6 | 11.7 |
| 25-29 | 4.2 | 3.8 | 3.4 | 4.6 | 6.6 | 7.7 |
| 30-34 | 1.7 | 1.5 | 1.3 | 1.8 | 2.4 | 2.9 |
| **Men part-time** | | | | | | |
| 16 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 17 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| 18 | 3.5 | 3.3 | 3.3 | 0.3 | 4.0 | 4.8 |
| 19 | 3.8 | 3.5 | 3.5 | 3.5 | 4.3 | 5.2 |
| 20 | 4.3 | 4.2 | 4.1 | 4.3 | 4.8 | 5.2 |
| 21 | 4.1 | 3.8 | 3.5 | 4.1 | 4.9 | 5.4 |
| 22 | 7.1 | 6.8 | 6.2 | 7.0 | 7.1 | 7.2 |
| 23 | 5.1 | 4.9 | 4.4 | 5.4 | 5.8 | 5.9 |
| 24 | 4.6 | 4.3 | 4.1 | 4.8 | 5.3 | 5.5 |
| 25-29 | 6.8 | 6.4 | 6.0 | 6.9 | 7.6 | 8.0 |
| 30-34 | 5.0 | 4.7 | 4.5 | 5.0 | 5.6 | 6.1 |
| **Women full-time** | | | | | | |
| 16 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| 17 | 6.3 | 5.4 | 5.3 | 6.1 | 6.1 | 6.1 |
| 18 | 30.9 | 26.6 | 25.0 | 30.7 | 31.4 | 32.0 |
| 19 | 28.5 | 27.1 | 25.6 | 28.1 | 32.5 | 33.7 |
| 20 | 21.6 | 19.3 | 17.8 | 22.2 | 23.5 | 24.3 |
| 21 | 18.1 | 15.9 | 14.7 | 18.7 | 21.7 | 23.6 |
| 22 | 9.6 | 8.9 | 8.9 | 8.9 | 12.1 | 13.1 |
| 23 | 6.5 | 6.0 | 5.7 | 6.3 | 7.9 | 9.3 |
| 24 | 6.0 | 5.6 | 5.3 | 5.8 | 7.8 | 9.5 |
| 25-29 | 2.5 | 2.2 | 2.0 | 2.5 | 3.7 | 4.7 |
| 30-34 | 1.7 | 1.5 | 1.3 | 1.5 | 1.8 | 2.1 |
| **Women part-time** | | | | | | |
| 16 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 17 | 0.5 | 0.6 | 0.6 | 0.6 | 1.0 | 1.8 |
| 18 | 4.4 | 4.3 | 4.3 | 4.3 | 4.5 | 4.9 |
| 19 | 4.0 | 3.9 | 3.9 | 3.9 | 4.3 | 4.8 |
| 20 | 5.5 | 5.1 | 5.1 | 5.1 | 5.5 | 5.6 |
| 21 | 4.6 | 4.3 | 4.0 | 4.3 | 4.7 | 5.1 |
| 22 | 7.4 | 7.1 | 6.6 | 7.6 | 7.9 | 8.2 |
| 23 | 5.0 | 4.9 | 4.4 | 5.4 | 6.2 | 6.8 |
| 24 | 4.7 | 4.5 | 4.1 | 5.0 | 6.0 | 6.8 |
| 25-29 | 5.8 | 5.5 | 5.1 | 5.7 | 6.8 | 8.1 |
| 30-34 | 4.7 | 4.5 | 4.3 | 4.7 | 6.5 | 8.3 |

**Table A-5.—Enrollment rates in nursery schools and kindergartens, by age and sex of student and by control of institution**

| Sex and Year | Public | | | | Nonpublic | | | |
|---|---|---|---|---|---|---|---|---|
| | 3-years old | 4-years old | 5-years old | 6-years old | 3-years old | 4-years old | 5-years old | 6-years old |
| **Males** | | | | | | | | |
| 1978 | 7.7 | 19.6 | 69.5 | 7.1 | 17.4 | 23.2 | 12.3 | 1.3 |
| 1983 | 10.6 | 23.7 | 73.9 | 6.6 | 22.3 | 28.0 | 12.8 | 1.1 |
| 1988 | 13.7 | 27.7 | 77.9 | 6.6 | 27.6 | 32.5 | 13.4 | 1.1 |
| **Females** | | | | | | | | |
| 1978 | 7.6 | 20.3 | 68.9 | 4.7 | 17.1 | 24.1 | 12.3 | 0.9 |
| 1983 | 10.2 | 24.6 | 74.1 | 4.7 | 21.3 | 28.9 | 12.0 | 0.8 |
| 1988 | 13.0 | 28.9 | 78.7 | 4.7 | 25.8 | 33.6 | 12.0 | 0.8 |

**Table A-6.—Enrollment rates in public schools**

| Grade level | Population base age | 1978 | 1983 | 1988 |
|---|---|---|---|---|
| Regular nursery and kindergarten | 5 | 86.3 | 85.4 | 85.4 |
| Grade 1 | 6 | 93.2 | 94.2 | 94.2 |
| Elementary ungraded and special | 5-13 | 2.4 | 3.1 | 3.4 |
| Secondary ungraded and special | 14-17 | 2.6 | 2.1 | 2.1 |
| Post-graduate | 18 | 0.5 | 0.4 | 0.4 |

**Table A-7.—Public grade retention rates**

| Grade | 1978 | 1983 | 1988 |
|---|---|---|---|
| 2 | 94.2 | 95.2 | 95.2 |
| 3 | 97.6 | 98.7 | 98.7 |
| 4 | 98.4 | 99.3 | 99.3 |
| 5 | 98.7 | 99.5 | 99.5 |
| 6 | 99.2 | 99.9 | 99.9 |
| 7 | 102.2 | 102.8 | 102.8 |
| 8 | 97.7 | 98.8 | 98.8 |
| 9 | 104.2 | 104.8 | 104.8 |
| 10 | 95.2 | 96.6 | 96.6 |
| 11 | 89.6 | 91.0 | 91.0 |
| 12 | 89.1 | 90.1 | 90.1 |

**Table A-8.—Percent that full-time enrollment by level enrolled and type of institution is of total enrollment, for each age and sex classification[1]**

| Age | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | 1978 | 1983 | 1988 | 1978 | 1983 | 1988 |
| | | | **Undergraduate, 4-year institutions** | | | |
| 16-17-years old | 81.5 | 77.1 | 77.1 | 64.7 | 68.3 | 68.3 |
| 18-19-years old | 69.7 | 67.9 | 67.9 | 64.1 | 61.8 | 60.5 |
| 20-21-years old | 84.7 | 84.3 | 84.3 | 84.6 | 78.8 | 77.0 |
| 22-24-years old | 51.4 | 51.8 | 51.8 | 64.5 | 60.6 | 60.6 |
| 25-29-years old | 42.8 | 41.8 | 41.8 | 46.5 | 40.0 | 40.0 |
| 30-34-years old | 30.9 | 29.3 | 27.9 | 51.3 | 47.4 | 47.4 |
| 35-years old and over | 31.4 | 29.9 | 29.6 | 50.9 | 47.2 | 47.2 |
| | | | **Undergraduate, 2-year institutions** | | | |
| 16-17-years old | 18.4 | 22.8 | 22.8 | 35.1 | 31.5 | 31.5 |
| 18-19-years old | 30.3 | 32.1 | 32.1 | 35.8 | 38.2 | 39.4 |
| 20-21-years old | 15.3 | 15.6 | 15.6 | 15.4 | 21.7 | 23.3 |
| 22-24-years old | 17.4 | 21.1 | 22.6 | 12.6 | 17.7 | 19.4 |
| 25-29-years old | 23.5 | 27.0 | 28.3 | 19.1 | 24.7 | 24.7 |
| 30-34-years old | 25.4 | 28.9 | 30.3 | 15.0 | 24.6 | 24.6 |
| 35-years old and over | 24.8 | 28.4 | 29.6 | 15.5 | 24.9 | 24.9 |
| | | | **Post-baccalaureate, 4-year institutions** | | | |
| 16-17-years old | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 18-19-years old | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-21-years old | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22-24-years old | 31.1 | 27.1 | 25.6 | 22.9 | 23.1 | 23.1 |
| 25-29-years old | 33.6 | 35.7 | 35.7 | 34.4 | 35.3 | 35.3 |
| 30-34-years old | 43.7 | 41.7 | 41.7 | 33.7 | 28.0 | 28.0 |
| 35-years old and over | 43.8 | 41.8 | 41.8 | 33.6 | 27.8 | 27.8 |

[1]Projections shown for 1983 and 1988 were adjusted to add to 100 percent before computing projections shown in chapter I.

**Table A-9.—Percent that part-time enrollment by level enrolled and type of institution is of total enrollment, for each age and sex classification[1]**

| Age | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | 1978 | 1983 | 1988 | 1978 | 1983 | 1988 |
| | | | **Undergraduate, 4-year institutions** | | | |
| 16-17-years old | 35.0 | 45.0 | 45.0 | 43.4 | 40.8 | 40.8 |
| 18-19-years old | 18.2 | 19.8 | 19.8 | 31.6 | 27.7 | 27.7 |
| 20-21-years old | 30.8 | 26.4 | 25.5 | 32.6 | 27.9 | 26.4 |
| 22-24-years old | 26.1 | 25.2 | 25.0 | 29.2 | 29.5 | 29.5 |
| 25-29-years old | 28.1 | 28.2 | 28.2 | 26.1 | 26.4 | 26.4 |
| 30-34-years old | 31.0 | 31.3 | 31.3 | 24.0 | 21.3 | 20.4 |
| 35-years old and over | 31.2 | 27.4 | 26.3 | 24.0 | 25.3 | 25.3 |
| | | | **Undergraduate, 2-year institutions** | | | |
| 16-17-years old | 65.0 | 50.8 | 50.8 | 55.2 | 56.5 | 56.5 |
| 18-19-years old | 73.4 | 73.5 | 73.5 | 64.7 | 67.6 | 67.6 |
| 20-21-years old | 67.0 | 68.5 | 69.4 | 57.2 | 64.2 | 65.7 |
| 22-24-years old | 60.8 | 63.4 | 64.8 | 49.3 | 54.9 | 57.6 |
| 25-29-years old | 41.6 | 43.9 | 43.9 | 49.3 | 54.2 | 56.8 |
| 30-34-years old | 44.2 | 48.1 | 49.1 | 56.9 | 62.2 | 64.0 |
| 35-years old and over | 44.1 | 48.0 | 49.1 | 56.8 | 62.0 | 64.0 |
| | | | **Post-baccalaureate, 4-year institutions** | | | |
| 16-17-years old | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 |
| 18-19-years old | 8.4 | 6.0 | 6.0 | 3.7 | 3.9 | 3.9 |
| 20-21-years old | 2.2 | 5.1 | 5.1 | 10.2 | 8.0 | 8.0 |
| 22-24-years old | 13.1 | 10.9 | 10.2 | 21.4 | 22.7 | 22.7 |
| 25-29-years old | 30.1 | 27.8 | 27.8 | 24.4 | 25.3 | 25.3 |
| 30-34-years old | 24.7 | 24.7 | 24.7 | 19.1 | 16.5 | 15.6 |
| 35-years old and over | 24.6 | 24.6 | 24.6 | 19.1 | 19.8 | 19.8 |

[1]Projections shown for 1983 and 1988 were adjusted to add to 100 percent before computing projections shown in chapter I.

**Table A-10.—Public enrollment as a percent of total enrollment, by attendance status, sex and level enrolled and by type of institution**

| Enrollment category | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | 1978 | 1983 | 1988 | 1978 | 1983 | 1988 |
| Full-time, undergraduate, 4-year institutions | 68.4 | 68.6 | 68.6 | 68.8 | 69.1 | 69.1 |
| Part-time, undergraduate, 4-year institutions | 71.7 | 71.5 | 71.5 | 70.2 | 70.4 | 70.4 |
| Full-time, undergraduate 2-year institutions | 93.9 | 94.2 | 94.2 | 90.7 | 91.3 | 91.3 |
| Part-time, undergraduate, 2-year institutions | 98.6 | 98.6 | 98.6 | 98.5 | 98.6 | 98.6 |
| Full-time, post-baccalaureate, 4-year institutions | 56.7 | 57.1 | 57.1 | 62.0 | 62.4 | 62.4 |
| Part-time, post-baccalaureate, 4-year institutions | 62.1 | 62.9 | 62.9 | 72.6 | 73.1 | 73.1 |

**Table A-11.—Graduate enrollment as a percent of total post-baccalaureate enrollment, by sex and attendance status, and by type and control of institution**

| Enrollment category | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | 1978 | 1983 | 1988 | 1978 | 1983 | 1988 |
| Full-time, 4-year, public | 70.9 | 70.7 | 70.3 | 83.6 | 80.3 | 78.4 |
| Part-time, 4-year, public | 98.8 | 98.6 | 98.6 | 99.7 | 99.5 | 99.5 |
| Full-time, 4-year, private | 49.2 | 49.0 | 48.9 | 65.6 | 62.2 | 60.9 |
| Part-time, 4-year, private | 91.1 | 91.0 | 91.0 | 95.1 | 95.4 | 95.4 |

**Table A-12.—Percent that the full-time-equivalent of part-time enrollment is of part-time enrollment, by level enrolled and by type and control of institution**

| Enrollment category | 1978 | 1983 | 1988 |
|---|---|---|---|
| Public, 4-year, undergraduate | 41.2 | 40.6 | 40.6 |
| Public, 2-year, undergraduate | 34.5 | 35.1 | 35.1 |
| Private, 4-year, undergraduate | 40.2 | 38.0 | 38.0 |
| Private, 2-year, undergraduate | 40.0 | 40.0 | 40.0 |
| Public, 4-year, graduate | 36.1 | 35.6 | 35.6 |
| Public, 2-year, graduate | 20.0 | ... | ... |
| Private, 4-year, graduate | 38.8 | 37.4 | 37.4 |
| Private, 2-year, graduate | ... | ... | ... |
| Public, 4-year, first-professional | 50.0 | 45.3 | 45.3 |
| Public, 2-year, first-professional | ... | ... | ... |
| Private, 4-year, first-professional | 70.0 | 54.1 | 54.1 |
| Private, 2-year, first-professional | ... | ... | ... |

# A-2—Graduates and Degrees

## High School Graduates

Projections of high school graduates by sex were developed by expressing high school graduates as a percentage of the average of the 17- and 18-year old population (table A-13). The percentage was assumed to remain constant at levels consistent with the most recent rates throughout the projected period. The constant rate was applied to projections of the average of the 17- and 18-year old population to obtain projections of high school graduates.

Projections of public high school graduates were developed by using graduation rates (table A-14) based on projections of enrollment in grade 12 from the third component of IFMOD. Public graduation rates were calculated by dividing the number of public high school graduates by enrollment in grade 12. These graduation rates were then projected and applied to projected enrollment in grade 12 to obtain projections of public high school graduates. Projections of nonpublic high school graduates were obtained by subtracting public high school graduates from total high school graduates.

## Degrees

The College Graduate Model (CGM) produces projections of the supply of new college graduates at the bachelor's, master's, doctor's and first-professional levels. The College Graduate Model maintains a data bank of historical series over time for each sex of earned degrees conferred by level and by field of study. The CGM is composed of three submodels—Level and Sex Submodel (LSS), Degrees by Field Submodel (DFS), and Degrees by Subfield Submodel (DSS). Projections of degrees by subfield are not included in this publication, but are produced for the Occupational Outlook program of the Bureau of Labor Statistics and the Manpower Assessment Project of the U.S. Department of Agriculture. In past editions, degree projections were based on a composite population that was representative of the ages of degree recipients. In this publication, the projections are developed by using regression models with explanatory variables that are based on age-specific enrollment projections.

At the doctor's level, the combined use of age data from the *Doctorate Record File*[1] and graduate enrollment beyond the first-year by age[2] identify the demographic state from which doctoral degree recipient are drawn.

### Level and Sex Submodel (LSS)

#### Bachelor's Degrees

Bachelor's degree projections by sex are based jointly on undergraduate enrollment and fourth-year enrollment by attendance status. The percentage that fourth-year college enrollment is of undergraduate enrollment in 4-year institutions was projected using exponential smoothing as the principal forecasting technique (table A-15). Projections of fourth-year enrollment were developed by applying these projected percentages to projections of undergraduate enrollment by attendance status

Results of the regression analysis used to project bachelor's degrees by sex are shown in equations (1) and (2) of table A-16. Full-time fourth-year enrollment was highly significant in determining bachelor's degree outcomes. In contrast, the part-time variable was not as significant in determining bachelor's degrees. Several factors could account for the lack of significance in the part-time variable. Fourth-year enrollment prior to 1976 was estimated since no data exist prior to that time. Attempts to find lag relationships for the part-time variable were not successful. As a result the part-time variable appears at the same time period as the full-time variable. These factors could partially explain the lack of significance of the part-time variable for both men and women.

#### Master's Degrees

The projections of master's degrees by sex are based jointly on total graduate enrollment and first-year graduate enrollment by attendance status. Projections of first-year graduate enrollment were obtained by forecasting the percentage that first-year graduate enrollment is of total graduate enrollment (table A-15) and applying these projected percentages to projected graduate enrollment by attendance

[1]National Research Council, *Summary Report Doctorate Recipients from United States Universities*, Washington, D.C., 1972-1978.

[2]See table A-15.

NOTE: Low and high alternative projections of bachelor's, master's, and doctor's degrees reflect the alternative projections of college enrollment by type of student (see appendix B, table B-1 for the assumption underlying the enrollment projection). The alternative projections for first-professional degrees reflect the alternatives for law and theology since no alternatives were available from the Bureau of Health Manpower for the projections of first-professional degrees in the health professions.

status. Equations (3) and (4) in table A-16 show the results of the regression analysis used to project master's degrees by sex. Although both variables are highly correlated with master's degrees, the full-time and part-time variables of first-year graduate enrollment are collinear. Thus, these equations should be used for prediction purposes only.

### Doctor's Degrees

Projections of doctor's degrees by sex are based jointly on age-specific enrollment and graduate enrollment beyond the first-year. The percentage that graduate enrollment beyond the first-year by age is of total college enrollment by age was calculated from historical data and projected using exponential smoothing. (See table A-15.) Projected rates were then applied to projected college enrollment to obtain projected graduate enrollment beyond the first-year. The rates that doctor's degrees by age are of graduate enrollment beyond the first-year by age (table A-17) were projected and applied to the results of projections of graduate enrollment beyond the first-year. Total doctor's degrees were obtained by summing the age groups.

### First-professional Degrees

Projections of first-professional degrees were determined by summing the individual field projections (see section on first-professional degrees by field). First-professional degrees in the health professions were obtained from the Bureau of Health Manpower. First-professional degrees in law, theology, pharmacy, chiropractic, and "other" fields were developed by NCES. Principal methods used were exponential smoothing and simple regression analysis.

## Degrees by Field Submodel (DFS)

### Bachelor's Degrees by field

At the bachelor's level, simple linear regression was the primary projection technique used with time as the independent variable and incorporating a dummy variable if the series was discontinuous between 1969-70 and 1970-71. Final field projections were compared to projected total bachelor's degrees to check for consistency. The two sets of projections were then adjusted iteratively until agreement was obtained. In cases where large discrepancies occurred, a reassesment of all projections involved took place in order to identify inconsistencies.

### Master's Degrees by field

For master's degrees, more independent variables were available. First-year graduate enrollment by field was available for six of the 20 fields. However, regression analysis using first-year enrollment as an independent variable was used in only two fields (engineering and business & management). The results of these regression analyses are shown in table A-18. Regression analysis for the other fields[3] gave unsatisfactory results. Traditional extrapolative techniques such as simple linear regression and exponential smoothing were used for the other fields. Enrollment percentages by field were determined by dividing first-year graduate enrollment by total first-year graduate enrollment. These percentages were projected and applied to projected first-year graduate enrollment obtained from the first submodel (LSS). The sum of the individual master's degree fields projected by various methods was compared to total master's degrees and adjusted in the same manner already explained for bachelor's degrees.

### Doctor's Degrees by field

For doctor's degrees, enrollment beyond the first-year was considered only in cases where sufficient lag structures could be identified. Regression analysis and exponential smoothing were the principal projection methods used. Adjustments were made between the sum of doctoral fields and total doctor's degrees in the same manner used for bachelor's and master's degrees.

### First-professional Degrees by field

Projections of first-professional degrees in the health professions (medicine, dentistry, optometry, ostepathy, podiatry, and veterinary medicine) were obtained from the Bureau of Health Manpower, and are based on provisions of the new health manpower legislation, P.L. 94-484. NCES projected the distribution by sex. First-professional degrees in law, theology, pharmacy, chiropractic and "other" fields were projected by NCES.

For first-professional degrees in the health professions, the projections of degrees by sex are based on the assumption that the percentage of degrees conferred on women in each field of study will follow the 1968-69 to 1977-78 trend through 1988-89. For men, projections of first-professional degrees in the health professions will equal total degrees minus the degrees for women.

For each sex, the projections of first-professional

[3]The other fields were architecture and environmental design, physical sciences, agriculture and natural resources, and biological sciences.

degrees in law, theology, pharmacy, and chiropractic medicine are based on the assumption that the projections will follow the 1968-69 to 1977-78 trends through 1988-89. The "other" field was assumed to be constant at the 1977-78 value through 1988-89.



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**Table A-13.—High school graduates as a percent of the average of the 17-and 18-year old population, by sex**

| Year | Boys | Girls |
|---|---|---|
| 1972 | 73.6 | 77.1 |
| 1974 | 71.9 | 76.5 |
| 1976 | 72.4 | 76.7 |
| 1978 | 71.5 | 76.9 |
| 1979-1989 (projected) | 71.9 | 76.8 |

**Table A-14.—High school graduates as a percent of enrollment in grade 12 in public schools**

| Year | Graduation rate (percent) |
|---|---|
| 1972 | 94.5 |
| 1974 | 94.1 |
| 1976 | 95.2 |
| 1978 | 93.4 |
| 1979-1989 (projected) | 94.0 |

**Table A-15.—Enrollment percentages, by year enrolled, attendance status, and sex***

| Year enrolled | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | 1978 | 1983 | 1988 | 1978 | 1983 | 1988 |
| Fourth-year undergraduate enrollment as a percent of total undergraduate enrollment in 4-year institutions | | | | | | |
| Full-time | 21.2 | 21.2 | 21.2 | 19.9 | 22.0 | 24.0 |
| Part-time | 23.6 | 24.2 | 26.1 | 29.7 | 30.2 | 30.8 |
| First-year graduate enrollment as a percent of total graduate enrollment | | | | | | |
| Full-time | 46.1 | 47.0 | 45.5 | 50.5 | 51.4 | 48.2 |
| Part-time | 45.8 | 45.4 | 44.1 | 47.6 | 47.8 | 46.9 |
| Graduate enrollment beyond first-year as a percent of total enrollment in all institutions | | | | | | |
| Age | | | | | | |
| Less than 25 | 1.6 | 1.6 | 1.6 | 1.0 | 1.0 | 1.0 |
| 25-29 | 10.1 | 10.1 | 10.1 | 7.5 | 7.5 | 7.5 |
| 30-34 | 10.7 | 10.7 | 10.7 | 6.8 | 6.8 | 6.8 |
| 35 and over | 10.5 | 10.5 | 10.5 | 6.7 | 6.7 | 6.7 |

*Estimated.

## Table A-16.—Equations for bachelor's and master's degrees

(N = 12)

| Level | Regression equations | $R^2$[1] | Durbin-Watson statistics[2] | Regression technique |
|---|---|---|---|---|
| **Bachelor's** | | | | |
| Men | (1) BAM=-79.09+0.82M4F+0.12M4P<br>(4.14) (0.21) | .73 | 1.80 | Ordinary least squares |
| Women | (2) BAW=-44.75+0.98W4F+0.61W4P<br>(4.72) (1.03) | .81 | 2.24 | Ordinary least squares |
| **Master's** | | | | |
| Men | (3) MAM=-31.21+1.20M5F+0.12M5P<br>(6.42) (0.79) | .93 | 1.78 | Ordinary least squares |
| Women | (4) MAW=-18.93+1.37W5F+0.20W5P<br>(2.56) (0.82) | .97 | 0.79 | Ordinary least squares |

WHERE:

BAM = The total number of bachelor's degrees awarded to men.
BAW = The total number of bachelor's degrees awarded to women.
M4F = Full-time fourth-year college enrollment for men.
M4P = Part-time fourth-year college enrollment for men.
W4F = Full-time fourth-year college enrollment for women.
W4P = Part-time fourth-year college enrollment for women.
MAM = The total number of master's degrees awarded to men.
MAW = The total number of master's degrees awarded to women.
M5F = Full-time first-year graduate enrollment for men.
M5P = Part-time first-year graduate enrollment for men.
W5F = Full-time first-year graduate enrollment for women.
W5P = Part-time first-year graduate enrollment for women.

[1] $R^2$ = Coefficient of determination.

[2] For an explanation of the Durbin-Watson Statistics, see J. Johnston, *Econometric Methods*, New York: McGraw Hill, 1972, pages 251-252.

NOTE.—The numbers in parentheses refer to the value of the t-statistics.

**Table A-17.—Percent that doctor's degrees is of graduate enrollment beyond first-year, by age**

| Age | Men | | | Women | | |
|---|---|---|---|---|---|---|
| | 1977 | 1983 | 1988 | 1977 | 1983 | 1988 |
| Less than 25 | 0.13 | 0.10 | 0.08 | 0.05 | 0.04 | 0.03 |
| 25-29 | 7.72 | 7.06 | 6.56 | 3.69 | 2.92 | 2.48 |
| 30-34 | 15.67 | 13.24 | 11.69 | 8.65 | 7.57 | 6.50 |
| 35 and over | 12.10 | 9.27 | 5.96 | 6.85 | 6.00 | 5.44 |

**Table A-18.—Equations for master's degrees, by selected field**

(N=12)

| Field | Regression equations | $R^2$[1] | Durbin-Watson statistics[2] | Regression technique |
|---|---|---|---|---|
| **Engineering** | | | | |
| Men | EGM= 5301.25+611.12MEGF+97.42MEGP<br>(3.53) (2.48) | .71 | 2.26 | Ordinary least squares |
| **Business and management** | | | | |
| Men | BMM=-6998.17+709.76MBMF+507.93MBMP<br>(1.93) (2.68) | .96 | 1.64 | Ordinary least squares |
| Women | BMW=-183.87+287.6WBMF+457.6WBMP<br>(1.36) (3.82) | .99 | 2.62 | Ordinary least squares |

WHERE:

EGM = Master's degrees in engineering awarded to men.
MEGF = Full-time first-year graduate enrollment in engineering for men.
MEGP = Part-time first-year graduate enrollment in engineering for men.
BMM = Master's degrees in business and management awarded to men.
BMW = Master's degrees in business and management awarded to women.
MBMF = Full-time first-year graduate enrollment in business and management for men.
MBMP = Part-time first-year graduate enrollment in business and management for men.
WBMF = Full-time first-year graduate enrollment in business and management for women.
WBMP = Part-time first-year graduate enrollment in business and management for women.

[1] $R^2$ = Coefficient of determination.

[2] For an explanation of the Durbin-Watson Statistics, see J. Johnston, *Econometric Methods*, New York: McGraw Hill, 1972, pages 251-252.

NOTE.—The numbers in parentheses refer to the value of the t-statistics.

**Table A-19.—Percents to develop alternative projections of bachelor's degrees in the social sciences fields: 1978-79 to 1988-89**

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| | | | **Total** | | |
| 1978-79 | 21.03 | 11.99 | 4.87 | 4.09 | 0.07 |
| 1979-80 | 20.42 | 11.35 | 4.78 | 4.22 | 0.07 |
| 1980-81 | 19.88 | 10.72 | 4.66 | 4.45 | 0.06 |
| 1981-82 | 19.23 | 10.10 | 4.59 | 4.49 | 0.05 |
| 1982-83 | 19.02 | 9.91 | 4.47 | 4.59 | 0.05 |
| 1983-84 | 18.76 | 9.68 | 4.35 | 4.68 | 0.05 |
| 1984-85 | 18.50 | 9.47 | 4.22 | 4.76 | 0.05 |
| 1985-86 | 18.27 | 9.22 | 4.13 | 4.87 | 0.05 |
| 1986-87 | 18.03 | 9.02 | 4.02 | 4.95 | 0.05 |
| 1987-88 | 17.83 | 8.79 | 3.93 | 5.06 | 0.05 |
| 1988-89 | 17.62 | 8.60 | 3.82 | 5.15 | 0.05 |
| | | | **Men** | | |
| 1978-79 | 20.79 | 13.16 | 3.81 | 3.81 | 0.02 |
| 1979-80 | 19.81 | 12.32 | 3.68 | 3.80 | 0.02 |
| 1980-81 | 18.89 | 11.51 | 3.55 | 3.81 | 0.02 |
| 1981-82 | 17.84 | 10.59 | 3.40 | 3.83 | 0.02 |
| 1982-83 | 17.67 | 10.53 | 3.25 | 3.87 | 0.02 |
| 1983-84 | 17.48 | 10.43 | 3.09 | 3.95 | 0.02 |
| 1984-85 | 17.30 | 10.31 | 2.93 | 4.04 | 0.02 |
| 1985-86 | 17.12 | 10.17 | 2.78 | 4.15 | 0.02 |
| 1986-87 | 16.98 | 10.06 | 2.63 | 4.28 | 0.01 |
| 1987-88 | 16.81 | 9.95 | 2.48 | 4.37 | 0.02 |
| 1988-89 | 16.63 | 9.85 | 2.33 | 4.43 | 0.02 |
| | | | **Women** | | |
| 1978-79 | 21.29 | 10.66 | 6.07 | 4.42 | 0.13 |
| 1979-80 | 21.09 | 10.28 | 6.00 | 4.70 | 0.12 |
| 1980-81 | 20.99 | 9.83 | 5.90 | 5.16 | 0.10 |
| 1981-82 | 20.75 | 9.57 | 5.89 | 5.20 | 0.09 |
| 1982-83 | 20.52 | 9.22 | 5.83 | 5.39 | 0.09 |
| 1983-84 | 20.19 | 8.86 | 5.75 | 5.50 | 0.09 |
| 1984-85 | 19.85 | 8.51 | 5.67 | 5.58 | 0.09 |
| 1985-86 | 19.53 | 8.19 | 5.60 | 5.66 | 0.08 |
| 1986-87 | 19.19 | 7.88 | 5.53 | 5.70 | 0.08 |
| 1987-88 | 18.91 | 7.57 | 5.46 | 5.80 | 0.08 |
| 1988-89 | 18.67 | 7.28 | 5.40 | 5.90 | 0.08 |

**Table A-20.—Percents to develop alternative projections of bachelor's degrees in the humanities fields: 1978-79 to 1988-89**

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| | | | **Total** | | | |
| 1978-79 | 13.83 | 1.00 | 4.29 | 1.23 | 2.86 | 4.45 |
| 1979-80 | 13.55 | 1.01 | 4.32 | 1.09 | 3.04 | 4.09 |
| 1980-81 | 13.21 | 1.02 | 4.32 | 0.94 | 3.21 | 3.72 |
| 1981-82 | 12.97 | 1.02 | 4.36 | 0.93 | 3.26 | 3.40 |
| 1982-83 | 12.94 | 1.03 | 4.34 | 0.81 | 3.39 | 3.37 |
| 1983-84 | 13.00 | 1.03 | 4.30 | 0.82 | 3.50 | 3.35 |
| 1984-85 | 13.04 | 1.04 | 4.26 | 0.84 | 3.59 | 3.32 |
| 1985-86 | 13.12 | 1.03 | 4.23 | 0.87 | 3.68 | 3.31 |
| 1986-87 | 13.20 | 1.05 | 4.20 | 0.89 | 3.77 | 3.29 |
| 1987-88 | 13.31 | 1.04 | 4.19 | 0.92 | 3.87 | 3.29 |
| 1988-89 | 13.33 | 1.04 | 4.16 | 0.96 | * | 3.21 |
| | | | **Men** | | | |
| 1978-79 | 11.58 | 1.45 | 3.11 | 0.57 | 2.79 | 3.66 |
| 1979-80 | 11.44 | 1.46 | 3.12 | 0.52 | 2.93 | 3.40 |
| 1980-81 | 11.30 | 1.46 | 3.14 | 0.46 | 3.08 | 3.16 |
| 1981-82 | 11.03 | 1.46 | 3.11 | 0.46 | 3.12 | 2.88 |
| 1982-83 | 10.97 | 1.43 | 3.06 | 0.40 | 3.21 | 2.87 |
| 1983-84 | 10.90 | 1.39 | 2.99 | 0.40 | 3.27 | 2.86 |
| 1984-85 | 10.79 | 1.34 | 2.91 | 0.40 | 3.31 | 2.84 |
| 1985-86 | 10.68 | 1.36 | 2.79 | 0.39 | 3.32 | 2.82 |
| 1986-87 | 10.61 | 1.34 | 2.71 | 0.39 | 3.37 | 2.80 |
| 1987-88 | 10.57 | 1.35 | 2.63 | 0.39 | 3.41 | 2.79 |
| 1988-89 | 10.53 | 1.34 | 2.57 | 0.39 | 3.47 | 2.77 |
| | | | **Women** | | | |
| 1978-79 | 16.36 | 0.50 | 5.62 | 1.97 | 2.93 | 5.34 |
| 1979-80 | 15.90 | 0.50 | 5.66 | 1.73 | 3.15 | 4.86 |
| 1980-81 | 15.35 | 0.53 | 5.64 | 1.47 | 3.35 | 4.36 |
| 1981-82 | 15.10 | 0.55 | 5.73 | 1.45 | 3.40 | 3.96 |
| 1982-83 | 15.12 | 0.59 | 5.76 | 1.25 | 3.59 | 3.93 |
| 1983-84 | 15.34 | 0.64 | 5.77 | 1.29 | 3.75 | 3.89 |
| 1984-85 | 15.58 | 0.69 | 5.78 | 1.34 | 3.90 | 3.86 |
| 1985-86 | 15.78 | 0.68 | 5.80 | 1.39 | 4.06 | 3.85 |
| 1986-87 | 16.02 | 0.72 | 5.82 | 1.45 | 4.20 | 3.83 |
| 1987-88 | 16.21 | 0.71 | 5.83 | 1.49 | 4.36 | 3.81 |
| 1988-89 | 16.29 | 0.73 | 5.85 | 1.56 | 4.48 | 3.68 |

**Table A-21.—Percents to develop alternative projections of bachelor's degrees in engineering, mathematics, and physical sciences fields: 1978-79 to 1988-89**

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Engineering technologies | Physical sciences |
|---|---|---|---|---|---|---|
| | | | **Total** | | | |
| 1978-79 | 11.62 | 1.16 | 0.80 | 6.21 | 0.96 | 2.50 |
| 1979-80 | 12.13 | 0.98 | 0.85 | 6.78 | 1.01 | 2.52 |
| 1980-81 | 12.59 | 0.85 | 0.92 | 7.19 | 1.06 | 2.59 |
| 1981-82 | 13.38 | 0.82 | 0.95 | 7.88 | 1.09 | 2.63 |
| 1982-83 | 13.60 | 0.83 | 1.01 | 7.86 | 1.14 | 2.76 |
| 1983-84 | 13.64 | 0.84 | 1.04 | 7.79 | 1.18 | 2.78 |
| 1984-85 | 13.69 | 0.86 | 1.07 | 7.76 | 1.23 | 2.78 |
| 1985-86 | 13.49 | 0.87 | 1.07 | 7.55 | 1.25 | 2.76 |
| 1986-87 | 13.51 | 0.89 | 1.09 | 7.48 | 1.29 | 2.76 |
| 1987-88 | 13.37 | 0.90 | 1.11 | 7.34 | 1.31 | 2.75 |
| 1988-89 | 13.38 | 0.92 | 1.13 | 7.21 | 1.34 | 2.77 |
| | | | **Men** | | | |
| 1978-79 | 18.65 | 1.28 | 1.07 | 10.89 | 1.77 | 3.65 |
| 1979-80 | 19.56 | 1.08 | 1.16 | 11.77 | 1.86 | 3.69 |
| 1980-81 | 20.33 | 1.00 | 1.26 | 12.38 | 1.95 | 3.75 |
| 1981-82 | 21.70 | 0.97 | 1.27 | 13.65 | 2.03 | 3.78 |
| 1982-83 | 21.95 | 0.96 | 1.36 | 13.58 | 2.10 | 3.94 |
| 1983-84 | 21.89 | 0.96 | 1.38 | 13.45 | 2.17 | 3.92 |
| 1984-85 | 21.80 | 0.96 | 1.39 | 13.32 | 2.24 | 3.89 |
| 1985-86 | 21.63 | 0.97 | 1.37 | 13.16 | 2.31 | 3.83 |
| 1986-87 | 21.56 | 0.97 | 1.38 | 13.03 | 2.38 | 3.80 |
| 1987-88 | 21.48 | 0.97 | 1.39 | 12.91 | 2.45 | 3.77 |
| 1988-89 | 21.43 | 0.97 | 1.41 | 12.79 | 2.51 | 3.75 |
| | | | **Women** | | | |
| 1978-79 | 3.71 | 1.01 | 0.48 | 0.96 | 0.06 | 1.19 |
| 1979-80 | 3.86 | 0.86 | 0.48 | 1.22 | 0.06 | 1.24 |
| 1980-81 | 3.94 | 0.69 | 0.49 | 1.38 | 0.07 | 1.30 |
| 1981-82 | 4.29 | 0.67 | 0.52 | 1.65 | 0.08 | 1.38 |
| 1982-83 | 4.38 | 0.69 | 0.54 | 1.63 | 0.08 | 1.45 |
| 1983-84 | 4.46 | 0.71 | 0.55 | 1.60 | 0.09 | 1.51 |
| 1984-85 | 4.54 | 0.74 | 0.61 | 1.57 | 0.09 | 1.53 |
| 1985-86 | 4.63 | 0.77 | 0.62 | 1.55 | 0.10 | 1.59 |
| 1986-87 | 4.71 | 0.81 | 0.66 | 1.52 | 0.10 | 1.63 |
| 1987-88 | 4.78 | 0.84 | 0.68 | 1.50 | 0.10 | 1.66 |
| 1988-89 | 4.87 | 0.86 | 0.68 | 1.48 | 0.11 | 1.74 |

**Table A-22.—Percents to develop alternative projections of bachelor's degrees in life sciences and miscellaneous fields: 1978-79 to 1988-89**

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & management: Accounting | Business & management | Education | Other |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Total** | | | | |
| 1978-79 | 14.60 | 5.69 | 2.49 | 6.42 | 38.92 | 4.65 | 13.24 | 14.32 | 6.72 |
| 1979-80 | 14.97 | 5.78 | 2.59 | 6.61 | 38.93 | 4.90 | 13.49 | 13.61 | 6.93 |
| 1980-81 | 15.58 | 5.87 | 2.70 | 7.01 | 38.74 | 5.09 | 13.78 | 12.76 | 7.10 |
| 1981-82 | 15.76 | 5.96 | 2.74 | 7.07 | 38.66 | 5.19 | 14.00 | 12.14 | 7.33 |
| 1982-83 | 16.08 | 6.02 | 2.83 | 7.23 | 38.36 | 5.24 | 14.33 | 11.31 | 7.48 |
| 1983-84 | 16.34 | 6.06 | 2.92 | 7.36 | 38.26 | 5.19 | 14.75 | 10.72 | 7.60 |
| 1984-85 | 16.59 | 6.09 | 3.02 | 7.48 | 38.18 | 5.14 | 15.20 | 10.14 | 7.71 |
| 1985-86 | 16.85 | 6.09 | 3.04 | 7.72 | 38.26 | 5.05 | 15.69 | 9.67 | 7.85 |
| 1986-87 | 17.10 | 6.12 | 3.12 | 7.85 | 38.16 | 5.00 | 16.06 | 9.14 | 7.97 |
| 1987-88 | 17.36 | 6.14 | 3.13 | 8.09 | 38.13 | 4.93 | 16.43 | 8.65 | 8.11 |
| 1988-89 | 17.61 | 6.17 | 3.20 | 8.24 | 38.05 | 4.88 | 16.69 | 8.25 | 8.24 |
| | | | | | **Men** | | | | |
| 1978-79 | 12.51 | 6.56 | 3.54 | 2.41 | 36.46 | 6.12 | 18.11 | 7.04 | 5.20 |
| 1979-80 | 12.77 | 6.68 | 3.65 | 2.44 | 36.42 | 6.38 | 18.06 | 6.59 | 5.38 |
| 1980-81 | 13.06 | 6.82 | 3.77 | 2.47 | 36.43 | 6.59 | 18.08 | 6.17 | 5.58 |
| 1981-82 | 13.26 | 6.87 | 3.87 | 2.52 | 36.18 | 6.62 | 18.18 | 5.67 | 5.71 |
| 1982-83 | 13.45 | 6.91 | 3.96 | 2.58 | 35.96 | 6.58 | 18.39 | 5.16 | 5.82 |
| 1983-84 | 13.60 | 6.91 | 4.04 | 2.66 | 36.13 | 6.50 | 18.64 | 5.09 | 5.90 |
| 1984-85 | 13.76 | 6.89 | 4.12 | 2.75 | 36.34 | 6.41 | 18.96 | 5.01 | 5.97 |
| 1985-86 | 13.90 | 6.84 | 4.20 | 2.86 | 36.67 | 6.29 | 19.49 | 4.88 | 6.01 |
| 1986-87 | 14.07 | 6.81 | 4.28 | 2.98 | 36.77 | 6.20 | 19.71 | 4.78 | 6.08 |
| 1987-88 | 14.23 | 6.79 | 4.36 | 3.08 | 36.90 | 6.12 | 19.96 | 4.68 | 6.14 |
| 1988-89 | 14.37 | 6.78 | 4.43 | 3.16 | 37.04 | 6.04 | 20.10 | 4.67 | 6.22 |
| | | | | | **Women** | | | | |
| 1978-79 | 16.95 | 4.70 | 1.30 | 10.96 | 41.69 | 3.00 | 7.74 | 22.53 | 8.43 |
| 1979-80 | 17.43 | 4.77 | 1.41 | 11.25 | 41.72 | 3.24 | 8.41 | 21.42 | 8.65 |
| 1980-81 | 18.40 | 4.81 | 1.51 | 12.08 | 41.32 | 3.42 | 8.97 | 20.13 | 8.80 |
| 1981-82 | 18.50 | 4.96 | 1.51 | 12.04 | 41.36 | 3.63 | 9.44 | 19.20 | 9.10 |
| 1982-83 | 18.98 | 5.04 | 1.59 | 12.35 | 41.01 | 3.76 | 9.84 | 18.09 | 9.31 |
| 1983-84 | 19.39 | 5.12 | 1.68 | 12.59 | 40.62 | 3.73 | 10.41 | 16.99 | 9.49 |
| 1984-85 | 19.77 | 5.20 | 1.77 | 12.80 | 40.25 | 3.71 | 10.95 | 15.92 | 9.67 |
| 1985-86 | 20.07 | 5.28 | 1.78 | 13.01 | 39.99 | 3.69 | 11.55 | 14.89 | 9.85 |
| 1986-87 | 20.40 | 5.37 | 1.86 | 13.18 | 39.68 | 3.68 | 12.07 | 13.90 | 10.03 |
| 1987-88 | 20.68 | 5.45 | 1.84 | 13.39 | 39.42 | 3.66 | 12.64 | 12.92 | 10.20 |
| 1988-89 | 21.04 | 5.53 | 1.90 | 13.61 | 39.13 | 3.65 | 13.08 | 12.02 | 10.38 |

**Table A-23.—Percents to develop alternative projections of master's degrees in the social sciences fields: 1978-79 to 1988-89**

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| | | | **Total** | | |
| 1978-79 | 15.84 | 4.91 | 2.70 | 6.21 | 2.03 |
| 1979-80 | 15.83 | 4.75 | 2.75 | 6.39 | 1.93 |
| 1980-81 | 16.20 | 4.57 | 2.80 | 6.64 | 2.19 |
| 1981-82 | 16.10 | 4.46 | 2.87 | 6.96 | 1.81 |
| 1982-83 | 16.29 | 4.32 | 2.94 | 7.28 | 1.76 |
| 1983-84 | 16.56 | 4.21 | 3.02 | 7.65 | 1.68 |
| 1984-85 | 16.87 | 4.10 | 3.09 | 8.00 | 1.68 |
| 1985-86 | 17.08 | 3.95 | 3.15 | 8.31 | 1.67 |
| 1986-87 | 17.28 | 3.81 | 3.20 | 8.60 | 1.67 |
| 1987-88 | 17.54 | 3.69 | 3.29 | 8.93 | 1.64 |
| 1988-89 | 17.87 | 3.55 | 3.36 | 9.30 | 1.65 |
| | | | **Men** | | |
| 1978-79 | 15.58 | 6.24 | 2.53 | 6.05 | 0.76 |
| 1979-80 | 15.94 | 6.16 | 2.61 | 6.50 | 0.68 |
| 1980-81 | 15.98 | 5.92 | 2.65 | 6.74 | 0.68 |
| 1981-82 | 16.17 | 5.72 | 2.66 | 7.11 | 0.68 |
| 1982-83 | 16.32 | 5.50 | 2.68 | 7.46 | 0.69 |
| 1983-84 | 16.61 | 5.32 | 2.70 | 7.89 | 0.69 |
| 1984-85 | 16.90 | 5.14 | 2.74 | 8.32 | 0.70 |
| 1985-86 | 16.98 | 4.89 | 2.75 | 8.64 | 0.70 |
| 1986-87 | 17.07 | 4.65 | 2.79 | 8.93 | 0.70 |
| 1987-88 | 17.15 | 4.42 | 2.76 | 9.27 | 0.70 |
| 1988-89 | 17.29 | 4.18 | 2.68 | 9.72 | 0.70 |
| | | | **Women** | | |
| 1978-79 | 16.12 | 3.54 | 2.87 | 6.37 | 3.34 |
| 1979-80 | 15.73 | 3.39 | 2.89 | 6.29 | 3.15 |
| 1980-81 | 16.41 | 3.32 | 2.95 | 6.54 | 3.60 |
| 1981-82 | 16.03 | 3.26 | 3.07 | 6.82 | 2.88 |
| 1982-83 | 16.27 | 3.20 | 3.18 | 7.11 | 2.78 |
| 1983-84 | 16.51 | 3.16 | 3.32 | 7.41 | 2.61 |
| 1984-85 | 16.83 | 3.10 | 3.43 | 7.70 | 2.61 |
| 1985-86 | 17.17 | 3.06 | 3.53 | 7.99 | 2.59 |
| 1986-87 | 17.48 | 3.01 | 3.59 | 8.29 | 2.59 |
| 1987-88 | 17.93 | 2.98 | 3.80 | 8.59 | 2.56 |
| 1988-89 | 18.44 | 2.94 | 4.03 | 8.90 | 2.57 |

**Table A-24.—Percents to develop alternative projections of master's degrees in the humanities fields: 1978-79 to 1988-89**

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| | | | Total | | | |
| 1978-79 | 9.04 | 0.98 | 3.01 | 0.83 | 1.10 | 3.12 |
| 1979-80 | 8.94 | 0.97 | 3.06 | 0.76 | 1.14 | 3.03 |
| 1980-81 | 8.84 | 0.95 | 3.13 | 0.67 | 1.17 | 2.92 |
| 1981-82 | 8.73 | 0.94 | 3.13 | 0.63 | 1.20 | 2.84 |
| 1982-83 | 8.72 | 0.93 | 3.14 | 0.63 | 1.20 | 2.83 |
| 1983-84 | 8.75 | 0.96 | 3.17 | 0.63 | 1.19 | 2.80 |
| 1984-85 | 8.72 | 0.97 | 3.19 | 0.63 | 1.18 | 2.76 |
| 1985-86 | 8.67 | 0.96 | 3.19 | 0.62 | 1.17 | 2.73 |
| 1986-87 | 8.64 | 0.96 | 3.20 | 0.62 | 1.17 | 2.69 |
| 1987-88 | 8.59 | 0.96 | 3.21 | 0.61 | 1.16 | 2.65 |
| 1988-89 | 8.56 | 0.96 | 3.23 | 0.62 | 1.15 | 2.61 |
| | | | Men | | | |
| 1978-79 | 7.94 | 1.39 | 2.71 | 0.44 | 1.06 | 2.33 |
| 1979-80 | 7.89 | 1.36 | 2.80 | 0.37 | 1.10 | 2.26 |
| 1980-81 | 7.65 | 1.30 | 2.82 | 0.29 | 1.12 | 2.12 |
| 1981-82 | 7.51 | 1.23 | 2.87 | 0.30 | 1.12 | 1.99 |
| 1982-83 | 7.50 | 1.17 | 2.90 | 0.30 | 1.13 | 2.00 |
| 1983-84 | 7.61 | 1.20 | 2.97 | 0.30 | 1.13 | 2.02 |
| 1984-85 | 7.70 | 1.21 | 3.02 | 0.31 | 1.12 | 2.04 |
| 1985-86 | 7.70 | 1.21 | 3.04 | 0.30 | 1.11 | 2.04 |
| 1986-87 | 7.73 | 1.21 | 3.08 | 0.30 | 1.10 | 2.04 |
| 1987-88 | 7.76 | 1.21 | 3.11 | 0.30 | 1.09 | 2.05 |
| 1988-89 | 7.81 | 1.20 | 3.15 | 0.31 | 1.09 | 2.05 |
| | | | Women | | | |
| 1978-79 | 10.16 | 0.56 | 3.31 | 1.22 | 1.14 | 3.92 |
| 1979-80 | 9.96 | 0.59 | 3.31 | 1.13 | 1.18 | 3.75 |
| 1980-81 | 9.95 | 0.62 | 3.41 | 1.03 | 1.22 | 3.67 |
| 1981-82 | 9.89 | 0.65 | 3.39 | 0.94 | 1.27 | 3.64 |
| 1982-83 | 9.88 | 0.70 | 3.37 | 0.94 | 1.26 | 3.62 |
| 1983-84 | 9.83 | 0.74 | 3.36 | 0.94 | 1.25 | 3.54 |
| 1984-85 | 9.70 | 0.74 | 3.34 | 0.93 | 1.24 | 3.45 |
| 1985-86 | 9.59 | 0.73 | 3.33 | 0.92 | 1.24 | 3.38 |
| 1986-87 | 9.51 | 0.73 | 3.32 | 0.92 | 1.23 | 3.30 |
| 1987-88 | 9.40 | 0.72 | 3.31 | 0.92 | 1.22 | 3.23 |
| 1988-89 | 9.30 | 0.72 | 3.30 | 0.92 | 1.21 | 3.16 |

**Table A-25.—Percents to develop alternative projections of master's degrees in engineering, mathematics, and physical sciences fields: 1978-79 to 1988-89**

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| | | | **Total** | | |
| 1978-79 | 9.08 | 0.99 | 1.02 | 5.24 | 1.82 |
| 1979-80 | 9.10 | 0.90 | 1.09 | 5.27 | 1.83 |
| 1980-81 | 8.94 | 0.80 | 1.13 | 5.19 | 1.82 |
| 1981-82 | 9.04 | 0.81 | 1.22 | 5.17 | 1.84 |
| 1982-83 | 9.14 | 0.81 | 1.28 | 5.20 | 1.86 |
| 1983-84 | 9.24 | 0.81 | 1.33 | 5.21 | 1.88 |
| 1984-85 | 9.32 | 0.82 | 1.39 | 5.21 | 1.91 |
| 1985-86 | 9.31 | 0.81 | 1.38 | 5.19 | 1.92 |
| 1986-87 | 9.34 | 0.81 | 1.38 | 5.22 | 1.93 |
| 1987-88 | 9.51 | 0.82 | 1.40 | 5.33 | 1.96 |
| 1988-89 | 9.59 | 0.82 | 1.40 | 5.39 | 1.98 |
| | | | **Men** | | |
| 1978-79 | 15.63 | 1.25 | 1.61 | 9.79 | 2.98 |
| 1979-80 | 15.97 | 1.17 | 1.73 | 10.01 | 3.06 |
| 1980-81 | 15.87 | 1.05 | 1.81 | 9.95 | 3.06 |
| 1981-82 | 15.93 | 1.05 | 1.91 | 9.88 | 3.09 |
| 1982-83 | 16.08 | 1.06 | 2.00 | 9.92 | 3.10 |
| 1983-84 | 16.27 | 1.07 | 2.11 | 9.94 | 3.14 |
| 1984-85 | 16.44 | 1.09 | 2.23 | 9.95 | 3.18 |
| 1985-86 | 16.44 | 1.08 | 2.23 | 9.95 | 3.18 |
| 1986-87 | 16.50 | 1.08 | 2.22 | 10.01 | 3.19 |
| 1987-88 | 16.59 | 1.08 | 2.23 | 10.07 | 3.20 |
| 1988-89 | 16.68 | 1.09 | 2.24 | 10.14 | 3.22 |
| | | | **Women** | | |
| 1978-79 | 2.39 | 0.71 | 0.43 | 0.60 | 0.64 |
| 1979-80 | 2.43 | 0.64 | 0.46 | 0.68 | 0.64 |
| 1980-81 | 2.45 | 0.58 | 0.50 | 0.72 | 0.65 |
| 1981-82 | 2.49 | 0.57 | 0.56 | 0.70 | 0.66 |
| 1982-83 | 2.54 | 0.57 | 0.59 | 0.70 | 0.68 |
| 1983-84 | 2.54 | 0.57 | 0.59 | 0.69 | 0.69 |
| 1984-85 | 2.54 | 0.56 | 0.59 | 0.69 | 0.70 |
| 1985-86 | 2.55 | 0.56 | 0.59 | 0.69 | 0.72 |
| 1986-87 | 2.57 | 0.56 | 0.58 | 0.69 | 0.73 |
| 1987-88 | 2.61 | 0.56 | 0.58 | 0.72 | 0.75 |
| 1988-89 | 2.64 | 0.56 | 0.58 | 0.74 | 0.76 |

**Table A-26.—Percents to develop alternative projections of master's degrees in life sciences and miscellaneous fields: 1978-79 to 1988-89**

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & Accounting | Business & management | Education | Other |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Total** | | | | |
| 1978-79 | 8.21 | 2.18 | 1.29 | 4.74 | 57.83 | 1.08 | 14.82 | 37.87 | 4.07 |
| 1979-80 | 8.06 | 1.98 | 1.35 | 4.73 | 58.07 | 1.09 | 15.75 | 37.14 | 4.09 |
| 1980-81 | 8.51 | 2.18 | 1.38 | 4.95 | 57.51 | 1.19 | 16.05 | 36.06 | 4.21 |
| 1981-82 | 8.80 | 2.22 | 1.45 | 5.13 | 57.33 | 1.29 | 16.27 | 35.41 | 4.37 |
| 1982-83 | 9.08 | 2.25 | 1.50 | 5.33 | 56.76 | 1.36 | 16.47 | 34.40 | 4.52 |
| 1983-84 | 9.38 | 2.29 | 1.55 | 5.54 | 56.08 | 1.38 | 16.46 | 33.53 | 4.71 |
| 1984-85 | 9.64 | 2.29 | 1.59 | 5.76 | 55.45 | 1.38 | 16.58 | 32.60 | 4.88 |
| 1985-86 | 9.86 | 2.27 | 1.62 | 5.97 | 55.08 | 1.36 | 16.53 | 32.17 | 5.03 |
| 1986-87 | 10.07 | 2.25 | 1.64 | 6.17 | 54.67 | 1.33 | 16.47 | 31.69 | 5.18 |
| 1987-88 | 10.28 | 2.25 | 1.69 | 6.34 | 54.08 | 1.31 | 16.49 | 30.93 | 5.35 |
| 1988-89 | 10.50 | 2.22 | 1.73 | 6.54 | 53.47 | 1.28 | 16.39 | 30.28 | 5.52 |
| | | | | | **Men** | | | | |
| 1978-79 | 7.33 | 2.66 | 1.97 | 2.70 | 53.54 | 1.57 | 24.08 | 23.49 | 4.39 |
| 1979-80 | 7.14 | 2.29 | 2.08 | 2.77 | 53.05 | 1.59 | 24.50 | 22.56 | 4.41 |
| 1980-81 | 7.62 | 2.66 | 2.15 | 2.82 | 52.87 | 1.74 | 25.28 | 21.28 | 4.58 |
| 1981-82 | 7.78 | 2.69 | 2.22 | 2.87 | 52.60 | 1.86 | 25.67 | 20.29 | 4.78 |
| 1982-83 | 7.91 | 2.70 | 2.29 | 2.92 | 52.19 | 1.94 | 26.07 | 19.21 | 4.97 |
| 1983-84 | 8.08 | 2.71 | 2.38 | 3.00 | 51.43 | 1.99 | 26.18 | 18.05 | 5.20 |
| 1984-85 | 8.27 | 2.72 | 2.47 | 3.08 | 50.68 | 1.99 | 26.48 | 16.78 | 5.43 |
| 1985-86 | 8.35 | 2.70 | 2.53 | 3.12 | 50.52 | 1.95 | 26.46 | 16.51 | 5.60 |
| 1986-87 | 8.42 | 2.66 | 2.59 | 3.16 | 50.29 | 1.90 | 26.44 | 16.18 | 5.78 |
| 1987-88 | 8.52 | 2.64 | 2.67 | 3.22 | 49.98 | 1.84 | 26.32 | 15.85 | 5.97 |
| 1988-89 | 8.62 | 2.60 | 2.74 | 3.28 | 49.60 | 1.78 | 26.14 | 15.51 | 6.17 |
| | | | | | **Women** | | | | |
| 1978-79 | 9.12 | 1.69 | 0.60 | 6.84 | 62.21 | 0.57 | 5.36 | 52.55 | 3.74 |
| 1979-80 | 8.95 | 1.69 | 0.63 | 6.63 | 62.93 | 0.62 | 7.26 | 51.28 | 3.78 |
| 1980-81 | 9.34 | 1.73 | 0.67 | 6.94 | 61.85 | 0.68 | 7.40 | 49.90 | 3.87 |
| 1981-82 | 9.76 | 1.78 | 0.71 | 7.28 | 61.82 | 0.74 | 7.33 | 49.77 | 3.99 |
| 1982-83 | 10.20 | 1.83 | 0.76 | 7.61 | 61.10 | 0.81 | 7.32 | 48.87 | 4.10 |
| 1983-84 | 10.61 | 1.88 | 0.75 | 7.97 | 60.52 | 0.80 | 7.20 | 48.29 | 4.23 |
| 1984-85 | 10.94 | 1.88 | 0.75 | 8.31 | 59.98 | 0.80 | 7.16 | 47.66 | 4.36 |
| 1985-86 | 11.29 | 1.87 | 0.76 | 8.66 | 59.40 | 0.80 | 7.11 | 47.01 | 4.48 |
| 1986-87 | 11.63 | 1.86 | 0.75 | 9.02 | 58.81 | 0.80 | 7.04 | 46.36 | 4.61 |
| 1987-88 | 11.99 | 1.86 | 0.75 | 9.38 | 58.07 | 0.79 | 6.92 | 45.61 | 4.74 |
| 1988-89 | 12.35 | 1.86 | 0.74 | 9.75 | 57.27 | 0.80 | 6.82 | 44.77 | 4.88 |

**Table A-27.—Percents to develop alternative projections of doctor's degrees in the social sciences fields: 1978-79 to 1988-89**

| Year | Total | Social sciences | Psychology | Public affairs & services | Library sciences |
|---|---|---|---|---|---|
| | | | **Total** | | |
| 1978-79 | 21.34 | 11.63 | 8.22 | 1.28 | 0.22 |
| 1979-80 | 21.28 | 11.54 | 8.15 | 1.37 | 0.21 |
| 1980-81 | 21.53 | 11.58 | 8.31 | 1.43 | 0.21 |
| 1981-82 | 21.65 | 11.49 | 8.39 | 1.56 | 0.21 |
| 1982-83 | 21.42 | 11.20 | 8.39 | 1.61 | 0.22 |
| 1983-84 | 21.28 | 10.93 | 8.41 | 1.71 | 0.23 |
| 1984-85 | 21.31 | 10.92 | 8.42 | 1.74 | 0.23 |
| 1985-86 | 21.35 | 10.90 | 8.41 | 1.81 | 0.23 |
| 1986-87 | 21.44 | 10.91 | 8.45 | 1.85 | 0.24 |
| 1987-88 | 21.48 | 10.93 | 8.42 | 1.89 | 0.24 |
| 1988-89 | 21.57 | 10.95 | 8.44 | 1.93 | 0.25 |
| | | | **Men** | | |
| 1978-79 | 20.23 | 11.98 | 6.93 | 1.15 | 0.17 |
| 1979-80 | 20.04 | 11.86 | 6.78 | 1.23 | 0.17 |
| 1980-81 | 20.71 | 12.15 | 7.13 | 1.27 | 0.17 |
| 1981-82 | 21.03 | 12.12 | 7.34 | 1.41 | 0.17 |
| 1982-83 | 20.74 | 11.76 | 7.35 | 1.45 | 0.18 |
| 1983-84 | 20.42 | 11.36 | 7.39 | 1.49 | 0.18 |
| 1984-85 | 20.45 | 11.33 | 7.37 | 1.57 | 0.18 |
| 1985-86 | 20.55 | 11.33 | 7.38 | 1.65 | 0.19 |
| 1986-87 | 20.60 | 11.33 | 7.39 | 1.68 | 0.19 |
| 1987-88 | 20.67 | 11.34 | 7.36 | 1.77 | 0.20 |
| 1988-89 | 20.80 | 11.38 | 7.40 | 1.81 | 0.20 |
| | | | **Women** | | |
| 1978-79 | 24.36 | 10.67 | 11.72 | 1.62 | 0.35 |
| 1979-80 | 24.48 | 10.71 | 11.69 | 1.75 | 0.33 |
| 1980-81 | 23.62 | 10.14 | 11.33 | 1.83 | 0.32 |
| 1981-82 | 23.24 | 9.88 | 11.07 | 1.95 | 0.33 |
| 1982-83 | 23.14 | 9.79 | 11.01 | 2.00 | 0.33 |
| 1983-84 | 23.42 | 9.84 | 10.97 | 2.26 | 0.34 |
| 1984-85 | 23.45 | 9.89 | 11.03 | 2.18 | 0.34 |
| 1985-86 | 23.36 | 9.81 | 10.98 | 2.22 | 0.35 |
| 1986-87 | 23.54 | 9.87 | 11.06 | 2.26 | 0.36 |
| 1987-88 | 23.49 | 9.93 | 11.02 | 2.18 | 0.36 |
| 1988-89 | 23.49 | 9.89 | 11.00 | 2.22 | 0.37 |

**Table A-28.—Percents to develop alternative projections of doctor's degrees in the humanities fields: 1978-79 to 1988-89**

| Year | Total | Architecture & environmental design | Fine and applied arts | Foreign languages | Communications | Letters |
|---|---|---|---|---|---|---|
| | | | **Total** | | | |
| 1978-79 | 11.47 | 0.25 | 2.22 | 2.00 | 0.63 | 6.38 |
| 1979-80 | 11.36 | 0.21 | 2.35 | 1.86 | 0.64 | 6.29 |
| 1980-81 | 10.86 | 0.21 | 2.37 | 1.70 | 0.64 | 5.94 |
| 1981-82 | 10.51 | 0.21 | 2.45 | 1.50 | 0.67 | 5.67 |
| 1982-83 | 10.32 | 0.22 | 2.52 | 1.48 | 0.69 | 5.39 |
| 1983-84 | 10.32 | 0.23 | 2.55 | 1.48 | 0.68 | 5.38 |
| 1984-85 | 10.23 | 0.23 | 2.53 | 1.48 | 0.69 | 5.29 |
| 1985-86 | 10.22 | 0.23 | 2.55 | 1.48 | 0.70 | 5.26 |
| 1986-87 | 10.19 | 0.24 | 2.53 | 1.50 | 0.68 | 5.23 |
| 1987-88 | 10.16 | 0.24 | 2.55 | 1.47 | 0.70 | 5.20 |
| 1988-89 | 10.23 | 0.25 | 2.58 | 1.50 | 0.72 | 5.19 |
| | | | **Men** | | | |
| 1978-79 | 9.32 | 0.26 | 1.92 | 1.24 | 0.60 | 5.30 |
| 1979-80 | 9.19 | 0.21 | 2.03 | 1.10 | 0.64 | 5.21 |
| 1980-81 | 8.81 | 0.21 | 2.02 | 1.01 | 0.63 | 4.93 |
| 1981-82 | 8.49 | 0.21 | 2.09 | 0.85 | 0.64 | 4.69 |
| 1982-83 | 8.23 | 0.22 | 2.11 | 0.84 | 0.66 | 4.40 |
| 1983-84 | 8.25 | 0.23 | 2.12 | 0.86 | 0.63 | 4.42 |
| 1984-85 | 8.25 | 0.23 | 2.12 | 0.83 | 0.69 | 4.38 |
| 1985-86 | 8.27 | 0.24 | 2.12 | 0.85 | 0.71 | 4.37 |
| 1986-87 | 8.26 | 0.24 | 2.11 | 0.86 | 0.67 | 4.37 |
| 1987-88 | 8.25 | 0.25 | 2.11 | 0.83 | 0.69 | 4.37 |
| 1988-89 | 8.31 | 0.25 | 2.11 | 0.86 | 0.70 | 4.38 |
| | | | **Women** | | | |
| 1978-79 | 17.29 | 0.23 | 3.02 | 4.06 | 0.70 | 9.28 |
| 1979-80 | 16.94 | 0.22 | 3.17 | 3.83 | 0.66 | 9.07 |
| 1980-81 | 16.07 | 0.22 | 3.24 | 3.45 | 0.65 | 8.52 |
| 1981-82 | 15.64 | 0.22 | 3.37 | 3.15 | 0.76 | 8.14 |
| 1982-83 | 15.57 | 0.22 | 3.56 | 3.11 | 0.78 | 7.90 |
| 1983-84 | 15.50 | 0.23 | 3.62 | 3.05 | 0.79 | 7.81 |
| 1984-85 | 15.17 | 0.23 | 3.56 | 3.10 | 0.69 | 7.59 |
| 1985-86 | 15.07 | 0.23 | 3.62 | 3.04 | 0.70 | 7.48 |
| 1986-87 | 14.98 | 0.24 | 3.57 | 3.09 | 0.71 | 7.37 |
| 1987-88 | 14.89 | 0.24 | 3.63 | 3.03 | 0.73 | 7.26 |
| 1988-89 | 14.96 | 0.25 | 3.71 | 3.09 | 0.74 | 7.17 |

**Table A-29.—Percents to develop alternative projections of doctor's degrees in engineering, mathematics, and physical sciences fields: 1978-79 to 1988-89**

| Year | Total | Mathematics & statistics | Computer & information sciences | Engineering | Physical sciences |
|---|---|---|---|---|---|
| | | | **Total** | | |
| 1978-79 | 19.72 | 2.34 | 0.63 | 7.25 | 9.50 |
| 1979-80 | 19.36 | 2.32 | 0.61 | 6.99 | 9.44 |
| 1980-81 | 18.65 | 2.12 | 0.58 | 6.97 | 8.98 |
| 1981-82 | 18.41 | 1.99 | 0.55 | 7.14 | 8.73 |
| 1982-83 | 18.49 | 1.99 | 0.57 | 7.16 | 8.77 |
| 1983-84 | 18.57 | 2.00 | 0.58 | 7.19 | 8.80 |
| 1984-85 | 18.45 | 2.01 | 0.56 | 7.14 | 8.75 |
| 1985-86 | 18.47 | 2.01 | 0.57 | 7.14 | 8.75 |
| 1986-87 | 18.47 | 1.98 | 0.58 | 7.15 | 8.76 |
| 1987-88 | 18.48 | 1.99 | 0.56 | 7.16 | 8.77 |
| 1988-89 | 18.46 | 1.97 | 0.57 | 7.16 | 8.77 |
| | | | **Men** | | |
| 1978-79 | 24.81 | 2.69 | 0.77 | 9.67 | 11.68 |
| 1979-80 | 24.58 | 2.67 | 0.76 | 9.45 | 11.69 |
| 1980-81 | 23.79 | 2.45 | 0.72 | 9.49 | 11.13 |
| 1981-82 | 23.51 | 2.26 | 0.68 | 9.73 | 10.84 |
| 1982-83 | 23.69 | 2.29 | 0.70 | 9.78 | 10.92 |
| 1983-84 | 23.81 | 2.30 | 0.72 | 9.83 | 10.96 |
| 1984-85 | 23.68 | 2.30 | 0.69 | 9.77 | 10.92 |
| 1985-86 | 23.70 | 2.30 | 0.71 | 9.78 | 10.91 |
| 1986-87 | 23.76 | 2.30 | 0.72 | 9.79 | 10.95 |
| 1987-88 | 23.76 | 2.31 | 0.69 | 9.82 | 10.95 |
| 1988-89 | 23.77 | 2.32 | 0.70 | 9.82 | 10.93 |
| | | | **Women** | | |
| 1978-79 | 5.92 | 1.39 | 0.23 | 0.70 | 3.60 |
| 1979-80 | 5.90 | 1.42 | 0.22 | 0.66 | 3.61 |
| 1980-81 | 5.50 | 1.29 | 0.22 | 0.54 | 3.45 |
| 1981-82 | 5.43 | 1.30 | 0.22 | 0.54 | 3.37 |
| 1982-83 | 5.34 | 1.22 | 0.22 | 0.56 | 3.34 |
| 1983-84 | 5.43 | 1.24 | 0.23 | 0.57 | 3.39 |
| 1984-85 | 5.40 | 1.26 | 0.23 | 0.57 | 3.33 |
| 1985-86 | 5.49 | 1.29 | 0.23 | 0.58 | 3.39 |
| 1986-87 | 5.35 | 1.19 | 0.24 | 0.59 | 3.33 |
| 1987-88 | 5.45 | 1.21 | 0.24 | 0.61 | 3.39 |
| 1988-89 | 5.44 | 1.11 | 0.25 | 0.62 | 3.46 |

**Table A-30.—Percents to develop alternative projections of doctor's degrees in life sciences and miscellaneous fields: 1978-79 to 1988-89**

| Year | Total life sciences | Biological sciences | Agriculture & natural resources | Health professions | Total miscellaneous fields | Business & Accounting | Business & management | Education | Other |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Total** | | | | |
| 1978-79 | 15.66 | 10.47 | 3.13 | 2.06 | 31.81 | 0.16 | 2.69 | 23.41 | 5.56 |
| 1979-80 | 16.00 | 10.44 | 3.30 | 2.26 | 32.00 | 0.15 | 2.66 | 23.24 | 5.95 |
| 1980-81 | 16.28 | 10.64 | 3.34 | 2.30 | 32.69 | 0.15 | 2.82 | 23.53 | 6.19 |
| 1981-82 | 16.48 | 10.66 | 3.43 | 2.39 | 32.96 | 0.12 | 2.85 | 23.40 | 6.58 |
| 1982-83 | 16.53 | 10.57 | 3.50 | 2.46 | 33.25 | 0.13 | 2.84 | 23.41 | 6.88 |
| 1983-84 | 16.51 | 10.48 | 3.55 | 2.48 | 33.33 | 0.13 | 2.84 | 23.34 | 7.03 |
| 1984-85 | 16.34 | 10.33 | 3.55 | 2.47 | 33.67 | 0.13 | 2.83 | 23.48 | 7.23 |
| 1985-86 | 16.29 | 10.19 | 3.62 | 2.48 | 33.66 | 0.13 | 2.78 | 23.50 | 7.24 |
| 1986-87 | 16.21 | 10.09 | 3.66 | 2.46 | 33.69 | 0.14 | 2.80 | 23.53 | 7.22 |
| 1987-88 | 16.17 | 9.95 | 3.74 | 2.48 | 33.71 | 0.14 | 2.79 | 23.54 | 7.23 |
| 1988-89 | 16.14 | 9.87 | 3.79 | 2.47 | 33.60 | 0.14 | 2.79 | 23.43 | 7.23 |
| | | | | | **Men** | | | | |
| 1978-79 | 16.60 | 10.82 | 4.02 | 1.75 | 29.04 | 0.17 | 3.34 | 19.29 | 6.24 |
| 1979-80 | 16.95 | 10.76 | 4.28 | 1.91 | 29.24 | 0.17 | 3.35 | 19.03 | 6.69 |
| 1980-81 | 17.38 | 11.09 | 4.34 | 1.94 | 29.31 | 0.17 | 3.54 | 18.56 | 7.04 |
| 1981-82 | 17.70 | 11.22 | 4.48 | 2.01 | 29.27 | 0.13 | 3.58 | 18.05 | 7.51 |
| 1982-83 | 17.70 | 11.10 | 4.58 | 2.03 | 29.63 | 0.13 | 3.61 | 18.10 | 7.79 |
| 1983-84 | 17.63 | 10.96 | 4.64 | 2.03 | 29.89 | 0.14 | 3.61 | 18.12 | 8.03 |
| 1984-85 | 17.46 | 10.78 | 4.65 | 2.03 | 30.17 | 0.14 | 3.59 | 18.15 | 8.29 |
| 1985-86 | 17.35 | 10.58 | 4.75 | 2.02 | 30.14 | 0.14 | 3.53 | 18.15 | 8.32 |
| 1986-87 | 17.23 | 10.42 | 4.80 | 2.02 | 30.15 | 0.14 | 3.55 | 18.15 | 8.31 |
| 1987-88 | 17.13 | 10.26 | 4.86 | 2.01 | 30.19 | 0.15 | 3.53 | 18.21 | 8.30 |
| 1988-89 | 17.07 | 10.12 | 4.93 | 2.01 | 30.06 | 0.15 | 3.52 | 18.08 | 8.31 |
| | | | | | **Women** | | | | |
| 1978-79 | 13.11 | 9.51 | 0.70 | 2.90 | 39.33 | 0.12 | 0.93 | 34.57 | 3.71 |
| 1979-80 | 13.55 | 9.62 | 0.77 | 3.17 | 39.13 | 0.11 | 0.87 | 34.10 | 4.04 |
| 1980-81 | 13.48 | 9.49 | 0.76 | 3.24 | 41.32 | 0.11 | 0.97 | 36.25 | 3.99 |
| 1981-82 | 13.36 | 9.23 | 0.76 | 3.37 | 42.35 | 0.11 | 0.98 | 37.02 | 4.23 |
| 1982-83 | 13.57 | 9.23 | 0.78 | 3.56 | 42.38 | 0.11 | 0.89 | 36.82 | 4.56 |
| 1983-84 | 13.69 | 9.28 | 0.79 | 3.62 | 41.97 | 0.11 | 0.90 | 36.43 | 4.52 |
| 1984-85 | 13.56 | 9.20 | 0.80 | 3.56 | 42.41 | 0.11 | 0.92 | 36.78 | 4.60 |
| 1985-86 | 13.67 | 9.23 | 0.82 | 3.62 | 42.41 | 0.12 | 0.93 | 36.80 | 4.56 |
| 1986-87 | 13.67 | 9.27 | 0.83 | 3.57 | 42.45 | 0.12 | 0.95 | 36.86 | 4.52 |
| 1987-88 | 13.80 | 9.20 | 0.97 | 3.63 | 42.37 | 0.12 | 0.97 | 36.68 | 4.60 |
| 1988-89 | 13.84 | 9.27 | 0.99 | 3.58 | 42.27 | 0.12 | 0.99 | 36.59 | 4.57 |

# A-3 Instructional Staff

## Classroom Teachers

Projections of classroom teachers in regular elementary and secondary schools are based on intermediate projections of enrollment by organizational level (table 5) and the alternative sets of pupil-teacher ratio projections shown in table 29.

Estimates and projections of the demand for additional teachers in regular public elementary and secondary schools were computed as follows: (1) The number of additional teachers needed for pupil-teacher ratio changes was computed as the difference between the total teacher demand in a given year less the estimated total teacher demand in the same year had the pupil-teacher ratio in the previous year remained constant, (2) The number of additional teachers needed for enrollment changes was computed as the difference between the total teacher demand in a given year and the total teacher demand in the previous year less the computed number needed for pupil-teacher ratio changes in the given year; and (3) The number of additional teachers needed in a given year to replace those leaving public schools either temporarily or permanently was computed as a percentage of the total number of teachers employed in the previous year. The percentages used are shown in table A-31.

Estimates and projections of the demand for additional teachers in regular nonpublic elementary and secondary schools are projected in the same manner as for public schools except that a 6 percent turnover rate is used throughout.

Projections of the supply of new teacher graduates were computed as percentages of the intermediate alternative bachelor's degree projections in table 14. The percentages used are shown in table A-32.

The notation and equations below generally describe the model used to estimate and project the demand for additional teachers.

Let:

$A_t$ = Total demand for additional teachers in year t

$AE_t$ = Additional teachers needed in year t for enrollment changes

$AP_t$ = Additional teachers needed in year t for pupil-teacher ratio changes.

$AR_t$ = Additional teachers needed in year t for replacement (turnover) of teachers

$E_t$ = Enrollment in year t

$T_t$ = Teachers in year t

$PT_t$ = Pupil-teacher ratio in year t

$R_t$ = Replacement (turnover) rate in year t

Then:

$A_t = AE_t + AP_t + AR_t$

Where:

$AE_t = T_t - T_{t-1} - AP_t$

$AP_t = T_t - E_t / PT_{t-1}$

$AR_t = R_t(T_{t-1})$

## Higher Education Instructional Staff

Projections of full-time instructional staff in institutions of higher education are based on alternative projections of full-time-equivalent-enrollment by type and control of institution (tables 15 and 16) and constant projections of student staff ratios (full-time-equivalent-enrollment to full-time-equivalent-instructional staff) by type and control of institution. Table A-33 shows the student-staff ratios for 1976, the last year for which faculty data is available. These ratios were used for projections for all years and for estimates for 1977 and 1978.

Also shown in table A-33 are 1976 percentages that were used to separate full-time-equivalent faculty projections by full-time or part-time status and by instructional rank (junior or senior). In addition table A-33 shows 1976 percentages that were used to convert the full-time-equivalent faculty projections in table 34 to the total faculty projections in table 33.

Projections of the demand for additional full-time-equivalent instructional staff were computed in the following manner: (1) The numbers needed for enrollment changes and student-staff ratio changes were computed as the difference between the total full-time-equivalent-professional staff in two successive years; and (2) The numbers needed for replacement of those leaving the profession either permanently or temporarily, was estimated at 4.5 percent of the total full-time-equivalent instructional staff in the previous year. This percentage was used for the low and intermediate alternatives and 6.0 percent was used for the high alternative.

**Table A-31.—Replacement (turnover) rates for classroom teachers in regular public elementary and secondary schools**

| Year | Low alternative | Intermediate alternative | High alternative |
|---|---|---|---|
| | | **Estimated** | |
| 1969 | ... | 8.0 | ... |
| 1970 | ... | 7.5 | ... |
| 1971 | ... | 7.0 | ... |
| 1972 | ... | 6.5 | ... |
| 1973 | ... | 6.0 | ... |
| 1974 | ... | 6.0 | ... |
| 1975 | ... | 6.0 | ... |
| 1976 | ... | 6.0 | ... |
| 1977 | ... | 6.0 | ... |
| 1978 | ... | 6.0 | ... |
| | | **Projected** | |
| 1979 | 5.5 | 6.0 | 6.5 |
| 1980 | 5.0 | 6.0 | 7.0 |
| 1981 | 5.0 | 6.0 | 7.5 |
| 1982 | 4.8 | 6.0 | 8.0 |
| 1983 | 4.8 | 6.0 | 8.0 |
| 1984 | 4.8 | 6.0 | 8.0 |
| 1985 | 4.8 | 6.0 | 8.0 |
| 1986 | 4.8 | 6.0 | 8.0 |
| 1987 | 4.8 | 6.0 | 8.0 |
| 1988 | 4.8 | 6.0 | 8.0 |

**Table A-32.—New teacher graduates as a percentage of bachelor's degrees**

| Year | Low alternative | Intermediate alternative | High alternative |
|---|---|---|---|
| 1969 | ... | 36.2 | ... |
| 1970 | ... | 35.8 | ... |
| 1971 | ... | 37.4 | ... |
| 1972 | ... | 35.7 | ... |
| 1973 | ... | 34.0 | ... |
| 1974 | ... | 29.5 | ... |
| 1975 | ... | 25.8 | ... |
| 1976 | ... | 24.5 | ... |
| 1977 | ... | 21.5 | ... |
| 1978 | ... | 20.6 | ... |
| 1979 | ... | 19.7 | ... |
| | | **Projected** | |
| 1980 | 18.5 | 19.2 | 20.0 |
| 1981 | 17.5 | 18.7 | 20.0 |
| 1982 | 16.6 | 18.3 | 20.0 |
| 1983 | 15.8 | 17.9 | 20.0 |
| 1984 | 15.2 | 17.6 | 20.0 |
| 1985 | 14.6 | 17.3 | 20.0 |
| 1986 | 14.0 | 17.0 | 20.0 |
| 1987 | 13.6 | 16.8 | 20.0 |
| 1988 | 13.1 | 16.6 | 20.0 |

## Table A-33.—Ratios and percents used to project total and full-time-equivalent faculty

| Type and control of institution | Student-staff ratio | Percentage of full-time-equivalent faculty that is senior | Percentage of senior full-time-equivalent faculty that is full-time | Percentage of junior full-time-equivalent faculty that is full-time | Full-time-equivalent percentage of senior part-time faculty | Full-time-equivalent percentage of junior part-time faculty |
|---|---|---|---|---|---|---|
| Public 4-year | 12.4 | 81.2 | 92.2 | 28.2 | 37.8 | 41.0 |
| Public 2-year | 22.5 | 97.2 | 76.0 | 72.4 | 29.6 | 34.0 |
| Private 4-year | 11.8 | 87.7 | 85.1 | 46.2 | 34.4 | 44.5 |
| Private 2-year | 17.9 | 98.5 | 73.1 | [1] | 37.8 | [1] |

[1] Junior faculty is negligible in private 2-year institutions.

# A.4 Expenditures

The projections of expenditure variables in this edition of *Projections* reflect NCES's first attempt at incorporating economic variables and econometric modeling into its projection methodology. The equations presented in this section should be viewed as forecasting rather than structural equations as the limitations of time and available data precluded the building of a large-scale, structural expenditure model. The particular equations shown were selected on the basis of their coefficients of determination ($R^2$'s) and the significance of the t-statistics of variables added or deleted as well as their ability to produce reasonable projections of total expenditures and the components of total expenditures.

The multiple regression technique used in *Projections* yields good results only if the relationships which existed among the endogenous and exogenous variables in the past continue throughout the projection period.

## Expenditures of Public and Nonpublic Elementary and Secondary Schools

All alternative projections of current, capital, and interest expenditures by public elementary and secondary schools use students in Average Daily Attendance (ADA) as an exogenous variable. Public ADA is estimated to be 92 percent of NCES's intermediate alternative projection of enrollment in public schools. The intermediate, low, and high alternative projections of all expenditures use values for the exogenous economic variables which come from Data Resources, Inc.'s intermediate, low, and high trend projections of the U.S. economy, respectively (see appendixes B-4 and F-4 for further details).

Nonpublic school intermediate, low, and high alternative expenditure projections are based on public school intermediate, low, and high alternative projections, respectively.

Values of the coefficients of the equations in this section and their related statistical measurements are shown in Table A-34.

### Current Expenditures of Public Elementary and Secondary Schools[1]

The current expenditure equation for the Elementary and Secondary School Expenditure Model is

$$\ln[(CUED/PGSL)/ADA] = \beta_0 + \beta_1 \cdot ADA + \beta_2[((GSL \cdot 1{,}000{,}000)/ADA)PGSL79]$$

Where:

ln indicates the natural log;

CUED = current expenditures of public elementary and secondary schools;

PGSL = the implicit price deflator for state and local purchases of good and services;

ADA = average daily attendance of students at public elementary and secondary schools;

GSL = state and local government purchases of goods and services (in billions); and

PGSL79 = PGSL normalized to school year 1978-1979 dollars.

In the current expenditure equation, a 1.0 percent increase in real State and local spending per ADA on goods and services, holding ADA constant, will give rise to a 0.9 percent increase in current expenditures on education. Holding real total State and local expenditures per pupil constant, an increase of 1,000 pupils in ADA will give rise to approximately a 0.001 percent increase in real expenditures on education per ADA. Numerous other equations were estimated but this equation was chosen as the one giving the best fit and the most reasonable projections.

### Current Expenditures on All Programs By Public Elementary and Secondary Schools

Total current expenditures include expenditures allocated to pupil costs as well as expenditures on summer schools, adult education, and community colleges operated by school districts. For all alternative projections, this series was projected as 102.0 percent of projected current expenditures allocated to pupil costs.

### Capital Expenditures of Public Elementary and Secondary school[2]

The capital expenditure equation for the Elementary and Secondary School Expenditure Model is

[1]Taken from a report entitled "Econometric Forecasts of Elementary/Secondary Education Expenditures to 1989-90", prepared for NCES by Lawrence Olson of Data Resources, Inc.

[2]Ibid.

$\ln[(CAED/PICNR)/ADA] =$

$\beta_0 + \beta_1 \cdot ADADOWN + \beta_2 \cdot ADADOWN\backslash 1$

$+ \beta_3 \cdot \ln[((GICV \cdot 1{,}000{,}000)/ADA)/PICNR79)]$

Where:

ln indicates the natural log;

CAED = capital expenditures of public elementary and secondary schools;

PICNR = the implicit price deflator for private nonresidential construction;

ADA = average daily attendance of students at public elementary and secondary schools;

ADADOWN = a dummy variable equal to unity if ADA fell between the current period and the previous period, zero otherwise;

ADADOWN\1 = a one-period lag in ADADOWN

GICV = new public construction put-in-place by all levels of government; and

PICNR79 = PICNR in school year 1979 dollars.

In this equation, a 1.0 percent increase in all real public new construction put-in-place per-pupil gives rise to a 0.6 percent increase in real capital expenditure per-pupil. A falling ADA between the current and previous periods, holding new public construction constant, decreases capital spending on education by about 14.0 percent, while a decline one period earlier decreases spending by about 8.0 percent. The projections were adjusted slightly to assure consistency between the last actual and first projected data.

## Interest Expenditures of Public Elementary and Secondary Schools[3]

The interest expenditure equation for the Elementary and Secondary School Expenditure Model is:

$\ln(INTED) = \beta_0 + \beta_1 \cdot \ln(BS\&L \cdot 1{,}000{,}000)$

$+ \beta_2 \cdot \ln(RMAAAGSLNS) + \beta_3 \cdot ADA$

Where:

ln indicates the natural log;

INTED = elementary and secondary school interest expenditure by state and local governments;

BS&L = state and local government obligations outstanding; and

RMAAAGSLNS = yield on AAA state and local government bonds (general obligations).

In this equation, an increase of 1.0 percent in the level of overall State and local debt increases interest expenditures by 0.97 percent while an increase of 1.0 percent in the current AAA rate on all State and local bonds is associated with a 0.07 percent increase in interest expenditures. The projections were adjusted slightly to assure consistency between the last actual and first projected data. Nominal expenditures on interest are used in this equation because no adequate deflator was available. Projections of interest expenditure were deflated by the All Urban Consumer Price Index to give expenditures on interest in constant dollars. The constant dollar interest expenditures should not be construed as reflecting the true cost of borrowing money.

## Current, Capital and Interest Expenditures of Nonpublic Elementary and Secondary Schools

All categories of expenditures by nonpublic elementary and secondary schools were estimated based on the assumption that the cost per teacher (including donated facilities and services) in nonpublic schools is the same as in the public schools. The equation used is as follows: $Y = XP$

Where:

Y = expenditures of nonpublic elementary and secondary schools;

X = ratio of nonpublic to public school teachers; and

P = public school expenditures in 1978-79 dollars.

The ratio of nonpublic to public school teachers was around .12 during the last 10 years and is expected to rise gradually to about .14 by 1988-89. The numbers on which these ratios were computed are shown in table 28.

One alternative method of projecting expenditures by nonpublic elementary and secondary schools would be to assume that per-pupil costs in nonpuplic schools are the same as in public schools. Since the average pupil-teacher ratio is higher in nonpublic than in public schools this estimation method would yield larger estimates than those shown here.

Both types of estimates are, in a sense, hypothetical; one shows what it would cost to educate nonpublic elementary and secondary school children if they were enrolled in public schools and if the public school pupil-teacher ratio were maintained; the other

[3]Ibid.

## Table A-34.—Equations for expenditures in public elementary and secondary schools

(N = 12)

| Dependent variables | Equations | $\bar{R}^2$[1] | Durbin-Watson statistics[2] | Estimation technique[3] |
|---|---|---|---|---|
| Current expenditures..... | ln((CUED/PGSL)/ADA) = -0.500691 | .9924 | .3076 | OLS |
| | + 1.04197E-05·ADA (4.1) | | | |
| | + 0.863406·ln(((GSL·1,000,000)/ADA)/PGSL79) (18.9) | | | |
| Capital outlay ..... | ln((CAED/PICNR)/ADA) = 1.33226 | .9385 | 2.1697 | OLS |
| | - 0.137103·ADADOWN (2.7) | | | |
| | - 0.767798·ADADOWN\[1] (1.6) | | | |
| | + 0.565677·ln(((GICV· 1,000,000)/ADA)/PICNR79) (3.4) | | | |
| Interest expenditures..... | ln(INTED) = -4.8417 + 0.966508·ln(BS&L·1,000,000) (21.0) | .9969 | 3.7358 | OLS |
| | + 0.0732694·ln(RMAAAGSLNS) (1.2) | | | |
| | + 1.40608E-05·ADA (3.0) | | | |

Values of t - statistics are in parentheses.

[1]$\bar{R}^2$ = coefficient of determination corrected for degrees of freedom.

[2]For an explanation of the Durbin-Watson Statistics, see J. Johnston, *Econometric Methods*, New York: McGraw Hill, 1972, pages 251-252.

[3]OLS = Ordinary Least Squares.

NOTE:—E - 05 = $10^{-5}$.

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shows the cost if the pupil-teacher ratio were maintained at the nonpublic school level.

### Salaries of Classroom Teachers in Public Elementary and Secondary Schools

The low alternative projection of the average salary of classroom teachers was made through the use of double exponential smoothing. The value of the smoothing constant used was .5.

For the intermediate and high alternative projections of the average salary of classroom teachers, regression was used.

The equation for the intermediate alternative projection is

$$SALC = \beta_0 + \beta_1 \cdot YPCAP + \beta_2 \cdot ADA$$

Where:

SALC = current dollar average classroom teacher salary;

YPCAP = current dollar personal income per capita; and

ADA = pupils in average daily attendance in public schools.

The equation of the high alternative projection is

$$SALC = \beta_0 + \beta_1 \cdot YPCAP.$$

The deflator used on average classroom teacher salaries was based on the All Urban Consumer Price Index. Values of the coefficients for this equation and related statistical measurements are shown in table A-35.

## Expenditures of Public and Private Institutions of Higher Education

The three alternative projections of current and capital expenditures of public and private institutions of higher education use enrollment variables (part-time enrollment, full-time enrollment, full-time-equivalent enrollment, etc.) as exogenous variables. The low and intermediate alternative expenditure projections employ values for these enrollment variables which are consistent with NCES's intermediate alternative projections of enrollment to 1988-89. The high alternative expenditure projections employ values for these enrollment variables which are consistent with NCES's high alternative projections of enrollment to 1988-89.

In addition, the three alternative projections of current and capital expenditures also use various economic variables (such as personal income, price indexes, etc.) as exogenous variables. The low alternative expenditure projections employ values for these variables which come from a pessimistic, business cycle view of the growth path of the U.S. economy[4]. The intermediate alternative expenditure projections employ values for these variables which come from a stable trend projection of the U.S. economy. The high alternative expenditure projections employ values for these variables which come from a projection of the growth path of the U.S. economy which, when compared with the stable (intermediate) trend above, assumes higher productivity and a lower rate of inflation.

## Current Expenditures of Public Institutions of Higher Education

Current expenditures are divided into six components with each component estimated separately: expenditures on student education, research, scholarships and fellowships, public service, auxiliary enterprises, and hospitals and independent operations. Expenditure on mandatory transfers, which is a subcomponent of the six components, was projected and then subtracted from the sum of the six projected components to arrive at a projection for current expenditures.

With the exception of expenditure on public service, all current expenditure components were projected in current dollars and then deflated to school year 1978-79 dollars using the All Urban Consumer Price Index (CPIU). Expenditures on public service were deflated, using the CPIU, before they were projected. Values for the coefficients of the equations in this section are shown in table A-36.

### Expenditure on Student Education

For the low alternative projection, current expenditure per full-time-equivalent student (FTE) was estimated in current dollars, multiplied by FTE and then deflated by the Consumer Price Index to get total current expenditure on student education.

The equation used is

$$CUPSEC/PFTE = \beta_0 + \beta_1 \cdot PFTE + \beta_2 \cdot YPCAPAVG$$

Where:

CUPSEC = current dollar expenditures of public institutions on student education;

PFTE = public full-time-equivalent enrollment; and

[4]Projections of the growth path of the U.S. economy were supplied to NCES by Data Resources, Inc.

**Table A-35.—Equations for average classroom teacher salaries in public elementary and secondary schools**

**(N = 10)**

| Dependent variables | Equations | $\bar{R}^2$[1] | Durbin-Watson statistics[2] | Estimation technique[3] |
|---|---|---|---|---|
| Average classroom teacher salaries: | | | | |
| (low alternative) .... | Data was double exponentially smoothed | | | |
| (intermediate alternative)..... | SALC = -5859.162 + 1357.939·YPCAP (33.71) + 0.1800685·ADA (2.67) | .994 | 0.400 | OLS |
| (high altenative)..... | SALC = 1319.144 + 1373.679·YPCAP (25.96) | .988 | 0.419 | OLS |

Values of t - statistics are in parentheses.

[1] $\bar{R}^2$ = coefficient of determination corrected for degrees of freedom.

[2] For an explanation of the Durbin-Watson Statistics, see J. Johnston, *Econometric Methods*, New York: McGraw Hill, 1972, pages 251-252.

[3] OLS = Ordinary Least Squares.

**Table A-36.—Equations for expenditures by public institutions of higher education**

**(N = 15)**

| Dependent variables | Equations | $R^2$[1] | Durbin-Watson statistics[2] | Estimation technique[3] |
|---|---|---|---|---|
| Student education: | | | | |
| (low alternative) ..... | CUPSEC/PFTE = 0.2097448E-01 + 0.1040296E-03·PFTE (3.44) + 0.3424935·YPCAPAVG (11.78) | .994 | 1.702 | OLS |
| (intermediate and high alternatives) ..... | CUPSEC = -7679.201 + 1.032322·PFTE (10.25) + 3163.477·YPCAP$_{(t-1)}$ (30.78) | .999 | 0.711 | OLS |
| Research ..... | CUPRC = 590.4249 -0.5384256·PFT4 (-1.92) + 0.8361817·PPT4 + 352.4122·YPCAP (1.48) (6.46) | .983 | 2.434 | OLS |
| Scholarships and fellowships ..... | CUPSFC = -533.9086 + 0.2148171·PFT (5.89) + 42.74092·YPCAP (2.68) | .980 | 2.116 | OLS |
| Public service: | | | | |
| (low) ..... | CUPPS9 = 0.260·PFTE | | | |
| (intermediate) ..... | CUPPS9 = 0.275·PFTE | | | |
| (high) ..... | CUPPS9 = 0.280·PFTE | | | |
| Auxiliary enterprises ..... | CUPAEC = -355.8587 + 0.7556406E-01·PFTE (1.70) + 432.8769·YPCAP (10.69) | .991 | 1.177 | OLS |
| Hospitals ..... | CUPHC = -2256.043 + 2343.603·CPIU (N = 10) (28.39) | .990 | 1.080 | OLS |
| Independent operations ..... | CUPI9 = 49 | | | |
| Mandatory transfers ..... | CUPMTC = 44.16884 + 0.3515670E-01·PFTE (1.16) + 66.20083·YPCAP (2.39) | .995 | 1.702 | OLS |
| Current expenditures..... | CUPT09 = CUPSE9 + CUPR9 + CUPSF9 + CUPPS9 + CUPAE9 + CUPHI9 - CUPMT9 | | | |
| Capital outlay ..... | CAP9 = -6906.313 + 0.4641833·PFTE (3.71) + 171.6809·GICV79 (7.90) | .857 | 1.413 | OLS |

Values of t - statistics are in parentheses.

[1] $R^2$ = coefficient of determination.

[2] For an explanation of the Durbin-Watson Statistics, see J. Johnston, *Econometric Methods*, New York: McGraw Hill, 1972, pages 251-252.

[3] OLS = Ordinary Least Squares.

NOTE — E - 01 = $10^{-1}$

YPCAPAVG = the average of current dollar personal income per capita in time t and time t-1.

Attempts were made to estimate the equation in constant dollars using various deflators but the $R^2$ and $\bar{R}^2$ dropped significantly. The one alternative equation that seemed to give as good a fit and reasonable projections is used for the intermediate and high alternative projections of expenditures of public institutions on student education.

The estimated equation is

$$CUPSEC = \beta_0 + \beta_1 \cdot PFTE + \beta_2 \cdot YPCAP_{t-1}$$

Where:

CUPSEC = current dollar expenditures on student education;

PFTE = full-time-equivalent-enrollment in public institutions; and

$YPCAP_{t-1}$ = current dollar personal income per capita in time t-1.

**Expenditure on Research**

For all alternative projections of expenditure of public institutions on research, the equation used is

$$CUPRC = \beta_0 + \beta_1 \cdot PFT4 + \beta_2 \cdot PPT4 + \beta_3 \cdot YPCAP$$

Where:

CUPRC = current dollar expenditure on research;

PFT4 = full-time enrollment in public 4-year colleges and universities;

PPT4 = part-time enrollment in public 4-year colleges and universities; and

YPCAP = current dollar personal income per capita.

**Expenditure on Scholarships and Fellowships**

For all alternative projections of expenditure by public institutions on scholarships and fellowships, the equation used is

$$CUPSFC = \beta_0 + \beta_1 \cdot PFT + \beta_2 \cdot YPCAP$$

Where:

CUPSFC = current dollar expenditures on scholarships and fellowships;

PFT = public full-time enrollment; and

YPCAP = current dollar personal income per capita.

**Expenditure on Public Service**

Expenditure on public service by public institutions was projected at a constant level of expenditure per public full-time-equivalent student (PFTE) in constant dollars and then multiplied by projected PFTE to get total expenditures in this category.

For the low alternative projection, expenditure per PFTE was allowed to fall to $260 in 1978-79 dollars and remain there. For the intermediate alternative projection, expenditure per PFTE was allowed to drop slightly from its 1977-78 level of $279 to $275 and held constant, in constant dollars, at that level. For the high alternative projection, expenditure per PFTE was projected at $280 in 1978-79 dollars per PFTE.

**Expenditure on Auxiliary Enterprises**

For all alternative projections of expenditure of public institutions on auxiliary enterprises the equation used is

$$CUPAEC = \beta_0 + \beta_1 \cdot PFTE + \beta_2 \cdot YPCAP$$

Where:

CUPAEC = current dollar expenditures on auxiliary enterprises;

PFTE = public full-time equivalent enrollment; and

YPCAP = current dollar personal income per capita.

**Expenditure on Hospitals and Independent Operations**

The expenditure-on-hospitals component of this series, for all alternative projections, was regressed on the All Urban Consumer Price Index (CPI). The equation is

$$CUPHC = \beta_0 + \beta_1 \cdot CPIU$$

Where:

CUPHC = current dollar expenditures on hospitals; and

CPIU = All Urban Consumer Price Index.

The expenditure-on-independent operations portion of this series fell by 92.8 percent in 1977-78 due to a change in reporting procedures by some institutions. Therefore, expenditure on independent operations was projected to remain at its 1977-78 level of $49 million, in 1978-79 dollars, for all alternative projections. Projections of constant dollar expenditure on hospitals and independent operations were then added together to obtain projections for this series.

**Expenditure on Mandatory Transfers**

For all alternative projections of expenditure by

public institutions on mandatory transfers, the equation used is

$CUPMTC = \beta_0 + \beta_1 \cdot PFTE + \beta_2 \cdot YPCAP$

Where:

CUPMTC = current dollar expenditures on mandatory transfers;

PFTE = public full-time equivalent enrollment; and

YPCAP = current dollar personal income per capita.

## Capital Outlay of Public Institutions of Higher Education

For all alternative projections of capital outlay by public institutions, the equation used is

$CAP9 = \beta_0 + \beta_1 \cdot PFTE + \beta_2 \cdot GICV79$

Where:

CAP9 = constant dollar capital expenditures;

PFTE = public full-time equivalent enrollment; and

GICV79 = constant dollar new public construction put-in-place.

Both CAP9 and GICV79 were deflated to 1978-79 dollars using the implicit price deflator for investment in private, nonresidential structures (PICNR).

## Current Expenditures of Private Institutions of Higher Education

Current expenditures are divided into six components with each component estimated separately: expenditures on student education, research, scholarships and fellowships, public service, auxiliary enterprises, and hospitals and independent operations. Expenditure on mandatory transfers, which is a subcomponent of the six components, was projected and then subtracted from the sum of the six projected components to arrive at a projection for current expenditures.

With the exception of expenditure on public service and mandatory transfers, all current expenditure components were projected in current dollars and then deflated to school year 1978-79 dollars using the All Urban Consumer Price Index (CPIU). Expenditures on public service and mandatory transfers were deflated, using the CPIU, before they were projected. Values for the coefficients of the equations in this section are shown in table A-37.

### Expenditure on Student Education

For all alternative projections of expenditure of private institutions on student education, the equation used is

$CUNSEC = \beta_0 + \beta_1 \cdot NFTE + \beta_2 \cdot YPCAP$

Where:

CUNSEC = current dollar expenditures on student education;

NFTE = private full-time-equivalent enrollment; and

YPCAP = current dollar personal income per capita lagged one year.

Attempts were made to project expenditure on student education in constant dollars as well as expenditure per full-time-equivalent student (FTE) in both current and constant dollars. In all cases, the resulting projections were unrealistic and/or the coefficients of determination ($R^2$'s) were very low.

### Expenditure on Research

For all alternative projections of expenditure by private institutions on research, the equation used is

$CUNRC = \beta_0 + \beta_1 \cdot YPCAP$

Where:

CUNRC = current dollar expenditures on research; and

YPCAP = current dollar personal income per capita.

### Expenditure on Scholarships and Fellowships

For all alternative projections of expenditure by private institutions on scholarships and fellowships, the equation used is

$CUNSFC = \beta_0 + \beta_1 \cdot NFT + \beta_2 \cdot YPCAP$

Where:

CUNSFC = current dollar expenditures on scholarships and fellowships;

NFT = private full-time enrollment; and

YPCAP = current dollar personal income per capita.

### Expenditure on Public Service

Expenditure on public service by private institutions was projected at a constant level of expenditure per private full-time-equivalent student (NFTE) and then multiplied by projected NFTE to get total expenditures in this category.

The low alternative projection of expenditure per NFTE is $228 in 1978-79 dollars, the intermediate projection is $233 and the high alternative projection is $239.

**Table A-37.—Equations for expenditures by private institutions of higher education**

**(N = 15)**

| Dependent variables | Equations | $R^2$[1] | Durbin-Watson statistics[2] | Estimation technique[3] |
|---|---|---|---|---|
| Student education ..... | CUNSEC=-3705.877 + 2.100381·NFTE (3.87) + 1179.620·YPCAP$_{(t-1)}$ (16.07) | .994 | 0.567 | OLS |
| Research ..... | CUNRC = 470.7012 + 107.9834·YPCAP (9.91) | .883 | 0.901 | OLS |
| Scholarships and fellowships ..... | CUNSFC = -1099.985 + 0.7929363·NFT (1.75) + 96.19952·YPCAP (3.93) | .983 | 0.568 | OLS |
| Public service: | | | | |
| (low) ..... | CUNPS9 = 0.228·NFTE | | | |
| (intermediate) ..... | CUNPS9 = 0.233·NFTE | | | |
| (high) ..... | CUNPS9 = 0.239·NFTE | | | |
| Auxiliary enterprises ..... | CUNAEC = -593.4408 + 0.5146519·NFT (2.07) + 0.5795123·NPT (2.44) + 163.6102·YPCAP (11.36) | .998 | 3.024 | OLS |
| Hospitals ..... | CUNHC = -1559.587 + 1586.158·CPIU (25.82) | .988 | 2.518 | OLS |
| Independent operations ..... | CUNI9 = 886 | | | |
| Mandatory transfers ..... | CUNMT9 = 0.0238(CUNSE9 + CUNR9 + CUNSF9 + CUNPS9 + CUNAE9 + CUNHI9) | | | |
| Current expenditures ..... | CUNT09 = CUNSE9 + CUNR9 + CUNSF9 + CUNPS9 + CUNAE9 + CUNHI9 - CUNMT9 | | | |
| Capital outlay: | | | | |
| (low) ..... | CAN9 = 0.62·NFTE | | | |
| (intermediate) ..... | CAN9 = 0.64·NFTE | | | |
| (high) ..... | CAN9 = 0.66·NFTE | | | |

[1]$R^2$ = coefficient of determination.

[2]For an explanation of the Durbin-Watson Statistics, see J. Johnston, *Econometric Methods*, New York: McGraw Hill, 1972, pages 251-252.

[3]OLS = Ordinary Least Squares.

NOTE:—Values of t - stistics are in parentheses.

**Expenditure on Auxiliary Enterprises**

For all alternative projections of expenditure on auxiliary enterprises by private institutions, the equation used is

$CUNAEC = \beta_0 + \beta_1 \cdot NFT + \beta_2 \cdot NPT + \beta_3 \cdot YPCAP$

Where:

CUNAEC = current dollar expenditures on auxiliary enterprises;

NFT = private full-time enrollment;

NPT = private part-time enrollment; and

YPCAP = current dollar personal income per capita.

**Expenditure on Hospitals and Independent Operations**

For all alternative projections, expenditure on independent operations was held constant at $886 million in 1978-79 dollars. The equation used for expenditure on hospitals is

$CUNHC = \beta_0 + \beta_1 \cdot CPIU$

Where:

CUNHC = current dollar expenditures on hospitals; and

CPIU = the All Urban Consumer Price Index.

Current dollar projections of expenditure on hospitals were deflated using the CPIU and then added to the projection of expenditure on independent operations to obtain the projections for this series.

**Expenditure on Mandatory Transfers**

For all alternative projections of expenditure for mandatory transfers by private institutions, the equation used is

CUNMT9 = 0.0238 (CUNSE9 + CUNR9 + CUNSF9 + CUNPS9 + CUNAE9 + CUNHI9)

Where:

CUNMT9 = constant dollar expenditure on mandatory transfers;

CUNSE9 = constant dollar expenditure on student education;

CUNR9 = constant dollar expenditure on research;

CUNSF9 = constant dollar expenditure on scholarships and fellowships;

CUNPS9 = constant dollar expenditure on public service;

CUNAE9 = constant dollar expenditure on auxiliary enterprises; and

CUNHI9 = constant dollar expenditure on hospitals and independent operations.

### Capital Outlay of Private Institutions of Higher Education

Capital outlay by private institutions was projected at a constant level of expenditure per private full-time-equivalent student (NFTE) and then multiplied by projected NFTE to get total private capital outlay.

The low alternative projection of capital outlay per NFTE is $620 in 1978-79 dollars, the intermediate projection is $640 and the high alternative projection is $660. The current dollar capital outlay data was deflated using the implicit price deflator for investment in private, nonresidential construction (PICNR).

## A-5 Average Student Charges

### Tuition and required fees

For each type and control of institution, average charges per student were calculated by summing the product of each individual institution's undergraduate charge multiplied by its full-time-equivalent undergraduate enrollment. This total was then divided by the sum of full-time-equivalent undergraduate enrollment for all institutions in the category, to obtain the average charge per student.

Average tuition calculations were based on undergradutate charges for private institutions and State resident undergraduate tuition for public institutions. Schools which reported a tuition of zero were included in the calculation in order to estimate a national average charge for tuition.

### Room and Board

The same methodology used to calculate average tuition was employed to estimate average room and board charges with the following exceptions. Institutions that did not report a room or board charge were excluded from these calculations in order to reflect

the average charge paid by students for the ancilliary services. When necessary, board charges were prorated to reflect a seven-day charge period. This permitted uniform comparisons to be made between the various service periods employed by different institutions. It also facilitated the calculation of total average charges for tuition, room and board. Room charges were adjusted for inflation using a combination of the rent and fuel components of the All Urban Consumer Price Index (CPIU). This composite deflator was weighted 80 and 20 percent by the rent and fuel components, respectively. Board was adjusted to 1978-79 constant dollars using the food component of the CPI (see table F-7).

## Charges for All Institutions

Total average charges for all institutions, by control, were estimated by multiplying the charge for university, 4-year, and 2-year institutions by the percentage of the full-time-equivalent enrollment they represented in the calculations of charges by type of institution. These products were then summed to produce a composite average charge for all institutions.

The notation below describes the variables and method of calculation used to derive average tuition levels. The same method was used to compute average charges for room and board.

Let:

$E_{ij}$ = full-time-equivalent enrollment in institution i in type of institution j;
$T_{ij}$ = tuition in institution i and type of institution j;
$E_j$ = Average full-time-equivalent enrollment in type of institution j;
$T_j$ = Average charge in type of institution j;
T = Average charge in all types of institutions.

Then:

$$\overline{T}_j = \frac{\sum_i (T_{ij} E_{ij})}{E_{ij}}$$

$$\overline{T} = \frac{\sum_j (\overline{T}_j E_j)}{E_j}$$

## Projections

Room and Board charges are not characterized by a statistically reliable trend. For this reason, projections were held constant, at the unweighted average of the last five observations, through 1988-89.

Tuition by type and control of institution was projected at three alternative levels—high, intermediate, and low by means of the following methodology:

### Public 2-year Institutions

*High alternative* - Tuition in 1978-79 was 4.3 percent of per capita personal income. This percentage was applied to projections of constant dollar personal income per capita to derive projected tuition through 1988-89. The years 1979 through 1981 were held constant at the 1978-79 level since a projected decrease in personal income per capita for these two years gave an unrealistically low projection of tuition levels.

*Intermediate alternative* - Projections were held constant at the 1978-79 level.

*Low alternative* - Tuition, expressed in current dollars was regressed against time yielding the following equation:

$T = 227.2 + 21.0t$
Where: t = time in years
T = tuition
Coefficient of determination ($R^2$) = .661

Tuition was then converted to 1978-79 dollars and held constant at the projected 1979-80 level through 1988-89.

### Public, Other 4-Year Institutions

*High alternative* - Tuition in 1978-79 was 7.4 percent of per capita personal income. This percentage was applied to projections of constant dollar per capita personal income to derive projected tuition levels through 1988-89. Average tuition for the years 1979 through 1981 was held constant at the 1978-79 level since a projected decrease in personal income per capita for these two years gave an unrealistically low projection of tuition .

*Intermediate alternative* - Projections were held constant in 1978-79 dollars at the 1978-79 level.

*Low alternative* - Tuition, expressed in current dollars was regressed against time yielding the following equation:

$T = 394.7 + 44.5t$
Where: t = time in years
T = tuition
Coefficient of determination ($R^2$) = .981

Tuition was then converted to 1978-79 dollars and held constant at the projected 1979-80 level through 1988-89.

## Public Universities

*High alternative* - Tuition in 1978-79 was 9.3 percent of personal income per capita. This percentage was applied to projections of constant dollar personal income per capita to calculate projected tuition through 1988-89. The years 1979 through 1981 were held constant at the 1978-79 level because a projected decrease in per capita personal income for these two years gave an unrealistically low projection of tuition.

*Intermediate alternative* - Projections were held constant in 1978-79 dollars at the 1978-79 level.

*Low alternative* - Double exponential smoothing was employed to project current dollar average tuition to 1979-80 after which it was deflated to 1978-79 dollars and held constant through 1988-89.

## Private 2-Year Institutions

*High alternative* - Average tutition in 1978-79 was 21.2 percent of constant dollar personal income per capita. This percentage was applied to projections of constant dollar personal income per capita to derive projected tuition levels through 1988-89. The years 1979-80 through 1981-82 were held constant at the 1978-79 level since a projected decrease in income per capita for these three years gave an unrealistically low projection of tuition.

*Intermediate alternative* - Projections were held constant, in 1978-79 dollars, at the 1978-79 level.

*Low alternative* - Double exponential smoothing was used to project average tuition to 1979-80 after which it was deflated to 1978-79 dollars and held constant through 1988-89.

## Private, Other 4-Year Institutions

*High alternative* - Average tutition was 30.8 percent of constant dollar personal income per capita in 1978-79. This percentage was applied to projections of constant dollar personal income per capita to derive projected average tuition through 1988-89. The years 1979 through 1981 were held constant at the 1978-79 level.

*Intermediate alternative* - Projections of average tuition were held constant, in 1978-79 dollars, at the 1978-79 level.

*Low alternative* - Double exponential smoothing was used to project average tuition to 1979-80 after which it was deflated to 1978-79 dollars and held constant through 1988-89.

## Private Universities

*High alternative* - In 1978-79, average tutition at private universities was 43.9 percent of constant dollar personal income per capita. Projections of average tuition were calculated by applying this percentage to projections of personal income per capita through 1988-89. The years 1979-80 through 1981-82 were held constant at the 1978-79 level.

*Intermediate alternative* - Projections were held constant, in 1978-79 dollars, at the 1978-79 level.

*Low alternative* - Double exponential smoothing was used to project average tuition to 1979-80 after which it was held constant at this level through 1988-89.

The data on personal income per capita in constant 1978-79 dollars was obtained from the Macroeconomic Forecasting Model created by Data Resources, Inc.

# Appendix B

# ASSUMPTIONS

All projections are based on underlying asumptions, and these assumptions determine projection results to a large extent. It is important that users of *Projections* understand the assumptions in order to determine the acceptability of projected time series for their purposes.

The tables in appendix B describe the primary assumptions upon which the projections of time series are based. For each time series, the respective tables and the assumptions used for each alternative projection are shown.

For most projections, low, intermediate, and high alternatives are shown. These alternatives reveal the level of uncertainty involved in making projections, and they also point out the sensitivity of projections to the assumptions they are based on.

Many of the projections in *Projections* are demographically based. Bureau of the Census Series II projections of the sizes of various age populations were chosen for use. The future fertility rates assumption, which determines projections of the number of births, is the key assumption in making population projections. The Series II population projections assume an ultimate completed cohort fertility rate of 2.1 births per woman by year 2000. This assumption plays a major role in determining population projections for the age groups enrolled in nursery school and kindergarten and in elementary grades. The effects of the fertility rate assumptions are more pronounced toward the end of the projection period.

For enrollments in secondary grades and college, the fertility assumption is of no consequence, since all students enrolled at these levels were already born when the population projections were made.

For projections of enrollments in nursery schools and kindergartens and in elementary schools, only Series II population projections were considered. The fertility assumptions used in this series have tracked closely to the most recent birth data, whereas Series I and Series III fertility assumptions have been very wide of the mark. For the relatively short range (10 years) of the projections in *Projections*, Series II population projections should prove to be more accurate than either Series I or Series III.

## Table B-1.—Enrollment

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Nursery and kindergarten enrollment | Age-specific enrollment rates will remain constant at levels consistent with the most recent rates. | low | 3 |
| | Age-specific enrollment rates will equal the average of the high and low alternative enrollment rates. | intermediate | 3 |
| | Age-specific enrollment rates will continue their past trends through 1988. | high | 3 |
| Elementary and secondary enrollment | Age-specific enrollment rates will remain constant at levels consistent with the most recent rates. | intermediate (no alternatives) | 4, 5 |
| | Public enrollment rates and public grade retention rates will remain constant at levels consistent with the most recent rates. | intermediate (no alternative) | 4, 5 |
| | Nonpublic enrollments by grade group (K-8 and 9-12) will equal the difference between total enrollment projections and public enrollment projections. | intermediate (no alternative) | 4, 5 |
| | The percentage of 7th and 8th grade public students enrolled in schools organized as secondary schools will remain constant at levels consistent with the most recent rates. | intermediate (no alternative) | 5 |
| | Nonpublic enrollment by organizational level equals nonpublic enrollment by grade group. | intermediate (no alternatives) | 5 |
| College full-time and part-time enrollment, by age | | | |
| Men | Age-specific enrollment rates will continue decreasing based on past trends. | low | 6-12 |
| | Age-specific enrollment rates will remain constant at levels consistent with the most recent rates. | intermediate | 6-12 |
| | Enrollment rates will increase back to the high levels experienced during the Vietnam War. For those categories (older age groups and part-time students) in which the 1978 enrollment rates are higher than the corresponding 1970 rates, enrollment rates were assumed to increased based on past trends. | high | 6-12 |
| Women | For each age group, enrollment rates will decrease proportionately to decreases projected for men under the low alternative. | low | 6-12 |
| | Age-specific enrollment rates will remain constant at levels consistent with the most recent rates. | intermediate | 6-12 |
| | Enrollment rates will continue increasing based on past trends. | high | 6-12 |
| College enrollment, by sex, attendance status, and level enrolled by student and type of institution | For each age group and for each attendance status separately, enrollment by sex and level enrolled by student and type of institution as a percentage of total enrollment will follow past trends through 1988. For each age group and attendance status category, the restriction that the sum of the percentages must equal 100 percent was applied. | high, intermediate, and low | 7-12 |
| College enrollment, by control of institution | For each enrollment category by sex, attendance status, and level enrolled by student and type of institution, public enrollment as a percentage of total enrollment will remain constant at levels consistent with the most recent rates. | high, intermediate, and low | 7-12 |
| Graduate enrollment | For each enrollment category by sex and attendance status of student and by type and control of institution, graduate enrollment as a percentage of post-baccalaureate enrollment will follow past trends through 1988. | high, intermediate, and low | 9-12 |
| Full-time equivalent of part-time enrollment | For each enrollment category by type and control of institution and level enrolled by student, the percentage that full-time equivalent of part-time enrollment is of part-time enrollment will remain constant at levels consistent with the most recent rates. | high, intermediate, and low | 12 |

## Table B-2.—Graduates and degrees

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| High school graduates by sex | The percentage that high school graduates is of the average of the 17- and 18-year old population will remain constant at levels consistent with the most recent rates. | intermediate (no alternatives) | 13 |
| Public high school graduates | The percentage that public high school graduates is of public enrollment in grade 12 will remain constant at levels consistent with the most recent observations. | intermediate (no alternatives) | 13 |
| Private high school graduates | The number of private high school graduates will equal total high school graduates minus public high school graduates. | intermediate (no alternatives) | 13 |
| Men | | | |
| Full-time, fourth-year college enrollment | The percentage that full-time fourth-year college enrollments is of full-time undergraduate college enrollment in 4-year institutions will remain constant at levels consistent with the most recent rates | high, intermediate, and low | 14 |
| Part-time, fourth-year college enrollment | The percentage that part-time fourth-year college enrollment is of part-time undergraduate enrollment in 4-year institutions will continue to increase based on past trends. | high, intermediate, and low | 14 |
| Women | | | |
| Full-time, fourth-year college enrollment | The percentage that full-time fourth-year college enrollment is of full-time undergraduate college enrollment in 4-year institutions will continue to increase based on past trends. | high, intermediate, and low | 14 |
| Part-time, fourth-year college enrollment | The percentage that part-time fourth-year college enrollment is of part-time undergraduate enrollment in 4-year institutions will continue to increase based on past trends. | high, intermediate, and low | 14 |
| Men | | | |
| Full-time, first-year graduate enrollment | The percentage that full-time first-year graduate enrollment is of full-time graduate enrollment will continue to decreased based on past trends. | high, intermediate, and low | 14 |
| Part-time, first-year graduate enrollment | The percentage that part-time, first-year graduate enrollment is of part-time graduate enrollment will continue to decrease based on past trends. | high, intermediate, and low | 14 |
| Women | | | |
| Full-time, first-year graduate enrollment | The percentage that full-time, first-year graduate enrollment is of full-time graduate enrollment will continue to decrease based on past trends. | high, intermediate, and low | 14 |
| Part-time, first-year graduate enrollment | The percentage that part-time, first-year graduate enrollment is of part-time graduate enrollment will continue to decrease based on past trends. | high, intermediate, and low | 14 |
| Men | | | |
| Graduate enrollment beyond the first-year, by age | For each age group, the percentage that graduate enrollment beyond the first-year is of total college enrollment will remain constant at levels consistent with the most recent rates. | high, intermediate, and low | 14 |
| Women | | | |
| Graduate enrollment beyond the first-year, by age | For each age group, the percentage that graduate enrollment beyond the first-year is of total college enrollment will remain constant at levels consistent with the most recent rates. | high, intermediate, and low | 14 |
| Men | | | |
| Doctor's degrees, by age | For each age group, the percentage that doctor's degrees is of graduate enrollment beyond the first-year will continue to decrease based on past trends. | high, intermediate, and low | 14 |

## Table B-2.—Graduates and degrees—Cont.

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Women | | | |
| Doctor's degrees, by age | For each age group, the percentage that doctor's degrees is of graduate enrollment beyond the first-year will continue to decrease based on past trends. | high, intermediate, and low | 14 |
| Bachelor's degrees by field and sex (except engineering and accounting). | For each field, the number of degrees will continue their past trends through 1988-89. | intermediate | 18, 19, 20 |
| Engineering | For each sex, the percentage that engineering degrees is of total bachelor's degrees will remain constant at the 1981-82 projected level through 1988-89. | intermediate | 19c, 20c |
| Accounting | For women, the number of degrees will continue their past trend through 1988-89. For men, the number of degrees will equal total accounting degrees minus degrees for women. | intermediate | 19d, 20d |
| Master's degrees by field and sex [except engineering (men) and business and management] | For all fields, the number of degrees will continue their past trends through 1988-89. | intermediate | 21, 22, 23 |
| Engineering (men) | The percentage that first-year enrollment by attendance status in engineering is of first-year graduate enrollment by attendance status will continue to decrease based on past trends. | intermediate | 22c |
| Business and management | For each sex, the percentage that first-year graduate enrollment in business and management by attendance status is of first-year graduate enrollment will continue its past trend through 1988-89. | intermediate | 22d, 23d |
| Doctor's degrees by field and sex | For each field, the number of degrees will continue their past trends through 1988-89. | intermediate | 24, 25, 26 |
| First-professional degrees by level and sex | | | |
| Medicine, Dentistry, Osteopathic, Optometry, Podiatry, and Veterinary medicine | For women, the number of degrees will continue their past trend through 1988-89. For men, the number of degrees will equal total degrees projected by the Bureau of Health Manpower minus the number of degrees projected for women. | intermediate | 27 |
| Law, Theology | The number of degrees will equal the average of the low and high alternative projections. | intermediate | 27 |
| Chiropractic, Pharmacy | The number of degrees will be constant at levels consistent with the most recent observations. | intermediate | 27 |
| Other | The number of degrees will equal zero through 1988-89. | intermediate | 27 |

## Table B-3.—Instructional staff

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Classroom teachers in regular elementary and secondary schools, by organizational level and control of school | Pupil-teacher ratios will remain constant at levels consistent with the most recent rates. | low | 28, 29 |
| | Pupil-teacher ratios will continue decreasing based on past trends with lower limits applied. | high | 28, 29 |
| | Pupil-teacher ratios will equal the average of the high and low alternative rates. | intermediate | 28, 29 |
| Demand for additional teachers in regular public schools due to replacement | Replacement (turnover) rates will return to the historic level of 8 percent. | high | 30 |
| | Replacement (turnover) rates will remain at the currently estimated level of 6 percent. | intermediate | 30 |
| | Replacement (turnover) rates will decrease to a theoretical floor of 4.8 percent. | low | 30 |
| Demand for additional teachers in regular nonpublic schools due to replacement | Replacement (turnover) rates will remain at the currently estimated level of 6 percent. | intermediate (no alternative) | 31 |
| Supply of new teacher graduates | The percentage that new teacher graduates is of bachelor's degrees will remain constant at levels consistent with the most recent rates. | high | 32 |
| | The percentage that new teacher graduates is of bachelor's degrees will continue decreasing based on past trends with lower limits applied. | low | 32 |
| | The percentage that new teacher graduates is of bachelor's degrees will equal the average of the high and low alternative rates. | intermediate | 32 |
| Full-time-equivalent instructional staff in institutions of higher education | For each type and control of institution, the ratio of full-time-equivalent enrollment to full-time-equivalent instructional staff will remain constant at 1976 levels. | high, intermediate, and low | 33, 34 |
| Full-time-equivalent senior instructional staff | For each type and control of institution, the percentage that senior full-time-equivalent instructional staff is of total full-time-equivalent instructional staff will remain constant at 1976 levels. | high, intermediate and low | 34 |
| Full-time senior instructional staff | For each type and control of institution, the percentage that full-time senior instructional staff is of full-time-equivalent senior instructional staff will remain constant at 1976 levels. | high, intermediate, and low | 33, 34 |
| Part-time senior instructional staff | For each type and control of institution, the percentage that full-time-equivalent senior part-time instructional staff is of senior part-time instructionsl staff will remain constant at 1976 levels. | high, intermediate, and low | 33, 34 |
| Full-time junior instructional staff | For each type and control of institution, the percentage that full-time junior instructional staff is of full-time-equivalent junior instructional staff will remain constant at 1976 levels. | high, intermediate, and low | 33, 34 |
| Part-time junior instructional staff | For each type and control of institution, the percentage that full-time-equivalent junior part-time instructional staff is of junior part-time instructional staff will remain constant at 1976 levels. | high, intermediate, and low | 33, 34 |
| Demand for additional full-time-equivalent instructional staff due to replacement | Replacement rates will remain at the currently estimated level of 4.5 percent. | intermediate and low | 35 |
| | Replacement rates will increase back to the 1959-60 level of 6.0 percent. | high | 35 |

# Current Interest and Capital Expenditures of Public Elementary and Secondary Schools

## General Assumptions

1. All intermediate alternative expenditure projections employ values for deflators and independent economic variables which come from a view of the growth path of the U.S. economy over the next 25 years which assumes mild economic cycles and an economy operating somewhat below its balanced growth path. The projected average annual productivity growth is 1.9 percent, average annual potential output growth is 2.5 percent, and the average annual rise in the Consumer Price Index is 7.4 percent (inflation will moderate slowly).

2. All low alternative expenditure projections employ values for deflators and independent economic variables which come from a view of the growth path of the U.S. economy over the next 25 years which assumes lower productivity and a higher inflation rate than was assumed for the intermediate projections (by the year 2004, the price level is projected to be 15.7 percent higher than in the intermediate trend model).

3. All high alternative expenditure projections employ values for deflators and independent economic variables which come from a view of the growth path of the U.S. economy over the next 25 years which assumes higher productivity and a lower inflation rate than was assumed for the intermediate expenditure projections (by the year 2004, the price level is projected to be 18.7 percent lower than in the intermediate trend model).

4. All alternative expenditure projections employ values for Average Daily Attendance (ADA) of students which are consistent with NCES's intermediate alternative projections of elementary/secondary school enrollment to 1988-89.

# Current and Capital Expenditures of both Public and Private Institutions of Higher Education

## General Assumptions

1. All low alternative expenditure projections in which economic variables are used (personal income per capita, deflators, etc.) employ values for these variables which come from a fairly pessimistic view of the growth path of the U.S. economy over the next 25 years. This view assumes typical business cycle behavior. The projected average annual productivity growth is 1.6 percent, average annual potential output growth is 2.2 percent, and the average annual rise in the Consumer Price Index is 7.9 percent.

2. All intermediate alternative expenditure projections in which economic variables are used (personal income, etc.) employ values for these variables which come from a view of the growth path of the U.S. economy over the next 25 years which is less pessimistic than that taken in assumption 1 above. This view assumes mild cycles with the economy operating somewhat below its balanced growth path and also assumes that inflation will moderate slowly. The projected average annual productivity growth is 1.9 percent, average annual potential output growth is 2.5 percent, and the average annual rise in the Consumer Price Index is 7.4 percent.

3. All high alternative expenditure projections in which economic variables are used employ values for these variables which come from a still less pessimistic view of the growth path of the U.S. economy over the next 25 years. In this view, the rate of inflation is eventually reduced by about 1.2 percentage points relative to the view taken in assumption 2 above.

4. All low and intermediate alternative expenditure projections in which enrollment variables are used (part-time enrollment, full-time enrollment, full-time-equivalent enrollment, etc.) employ values for these variables consistent with NCES's intermediate alternative projections of enrollment to 1988-89.

5. All high alternative expenditure projections in which enrollment variables are used employ values for these variables consistent with NCES's high alternative projections of enrollment to 1988-89.

6. The deflator used for all current expenditure variables was based on the All Urban Consumber Price Index.

7. The deflator used for all capital expenditures variables was the implicit price deflator for investment in private nonresidential structures.



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## Table B-4.—Expenditures, by elementary and secondary schools

### Table B-4A.—Expenditures, by public elementary and secondary schools

| Variables | Assumptions | Deflators | Alternatives | Tables |
|---|---|---|---|---|
| Current expenditures | Will continue its past relationship to students in average daily attendance in public schools and state and local government purchases of goods and services. | PGSL | high, intermediate, and low | 37, 39 |
| Interest expenditures | Will continue its past relationship to students in average daily attendance in public schools, state and local government obligations outstanding and the yield on AAA state and local government bonds (general obligations). | CPIU | high, intermediate and low | 37, 42 |
| Capital expenditures | Will continue its past relationship to students in average daily attendance in public schools and new public construction put-in-place by all levels of government. | PICNR | high, intermediate, and low | 37, 41 |

### Table B-4B.—Expenditures, by nonpublic elementary and secondary schools

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Current expenditures | The cost per teacher (including donated facilities and services) in nonpublic schools is the same as in public schools for these expenditures. | high, intermediate, and low | 37 |
| Interest expenditures | The cost per teacher (including donated facilities and services) in nonpublic schools is the same as in public schools for these expenditures. | high, intermediate, and low | 37 |
| Capital expenditures | The cost per teacher (including donated facilities and services) in nonpublic schools is the same as in public schools for these expenditures. | high, intermediate, and low | 37 |

WHERE:

PGSL is the implicit price deflation for the gross National product;
CPIU is the All Urban Consumer Price Index;
PICNR is the implicit price deflator for investment in private, non-residential structures.

## Table B-5.—Current and capital expenditures of institutions of higher education

### Table B-5A.—Current expenditures of public institutions of higher education

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Expenditures on student education | Expenditure per full-time-equivalent student will continue its past relationship with public full-time-equivalent enrollment and personal income per capita. | low | 43 |
| | Total expenditure will continue its past relationship with public full-time-equivalent enrollment and personal income per capita. | intermediate and high | |
| Expenditures on research | Will continue its past relationship to public full time enrollment in all 4-year institutions, public part-time enrollment in all 4-year institutions and personal income per capita. | low, intermediate, and high | 43 |
| Expenditures on scholarships and fellowships | Will continue its past relationship to public full-time enrollment and personal income per capita. | low, intermediate, and high | 43 |
| Expenditures on public service | Will drop to $260 per public full-time equivalent student and remain there (in 1978-79 dollars). | low | 43 |
| | Will remain at $275 per public full-time-equivalent student (in 1978-79 dollars). | intermediate | |
| | Will increase to $280 per public full-time-equivalent student and remain there (in 1978-79 dollars). | high | |
| Expenditures on auxiliary enterprises | Will continue its past relationship to public full-time-equivalent enrollment and personal income per capita. | low, intermediate, and high | 43 |
| Expenditures on hospitals | Will continue its past relationship with the Consumer Price Index. | low, intermediate, and high | 43 |
| Expenditures on independent operations | Will remain constant at $49 million (in 1978-79 dollars). | low, intermediate, and high | 43 |
| Mandatory transfers | Will continue its past relationship to public full-time-equivalent enrollment and personal income per capita. | low, intemediate, and low | 43 |

## Table B-5.—Current and capital expenditures of institutions of higher education—Cont.

### Table B-5B.—Current expenditures of private institutions of higher education

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Expenditures on student education | Will continue its past relationship to private full-time-equivalent enrollment and personal income per capita. | low, intermediate, and high | 43 |
| Expenditures on research | Will continue its past relationship to personal income per capita. | low, intermediate, and high | 43 |
| Expenditures on scholarships and fellowships | Will continue its past relationship with private full-time enrollment and personal income per capita. | low, intermediate, and high | 43 |
| Expenditures on public service | Will fall to $228 per private full-time-equivalent student and remain there (in 1978-79 dollars).<br>Will remain at $233 per private full-time-equivalent student (in 1978-79 dollars).<br>Will rise to $239 per private full-time-equivalent student and remain there (in 1978-78 dollars) | low<br>intermediate<br>high | 43 |
| Expenditures on auxiliary enterprises | Will continue its past relationship with private full-time enrollment, private part-time enrollment and personal income per capita. | low, intermediate, and high | 43 |
| Expenditures on hospitals | Will continue its past relationship with the Consumer Price Index. | low, intermediate, and high | 43 |
| Expenditures on independent operations | Will remain at $886 million (in 1978-79 dollars). | low, intermediate, and high | 43 |
| Mandatory transfers | Will continue its past relationship with total current expenditures (nonpublic). | low, intermediate, and high | 43 |

## Table B-5.—Current and capital expenditures of institutions of higher education—Cont.

### Table B-5C.—Capital expenditures of institutions of higher education

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Public capital outlay | Will continue its past relationship will public full-time-equivalent enrollment and new public construction put-in-place by all levels of government. | low, intermediate, and high | 37, 45 |
| Private capital outlay | Will fall to $620 per private full-time-equivalent student and remain there (in 1978-79 dollars).<br>Will remain at $640 per private full-time-equivalent student (in 1978-79 dollars).<br>Will rise to $660 per private full-time-equivalent student and remain there (in 1978-79 dollars). | low<br>intermediate<br>high | 37, 45 |

## Table B-6.—Average student charges

| Variables | Assumptions | Alternatives | Tables |
|---|---|---|---|
| Room and board | Room and board charges will equal the unweighted average of the last five years(in constant dollars). | high, intermediate, and low | 46 |
| Tuition, by type and control of institution | Average tuition at all institutions will continue to equal the same percentage of constant dollar per capita personal income as in 1978-79. | high | 46 |
| | Tuition will remain at the 1978-79 level (in constant dollars). | intermediate | 46 |
| | Tuition in constant dollars will follow its trend line to 1979-80 after which it will remain constant. | low | 46 |

# Appendix C
# ESTIMATION METHODS

The basic data used to project the time series listed in the following tables were wholly or partially estimated for the years indicated.

**Table C-1.—Enrollment**

| Time series | Years | Estimation method | Tables |
|---|---|---|---|
| Enrollment in regular nonpublic elementary and secondary schools | 1969, 1971-75 | For elementary and secondary schools separately, the percentage that enrollment in Catholic schools was of enrollment in all nonpublic schools was interpolated. The interpolated percentages were applied to Catholic enrollment figures in each year. | 4,5 |
| Enrollment in institutions of higher education, by age and attendance states | 1968, 1973, 1978 | For each sex, enrollment date from the Bureau of the Census by individual ages and by attendance status for two-year age groups were combined by assuming that within the two-year age groups, age and attendance status were distributed independently. The resultant enrollment estimates by age and attendance status were then adjusted to NCES enrollment counts by attendance status. | 6, 6a, 6b |

**Table C-2.—Teachers and instructional staff**

| Time series | Years | Estimation method | Tables |
|---|---|---|---|
| Classroom teachers in regular nonpublic elementary and secondary schools | 1969, 1971-75 | For elementary and secondary schools separately, pupil-teacher ratios were interpolated. The interpolated ratios were applied to estimates of nonpublic enrollment in each year. | 28 |
| Classroom teachers in regular public elementary and secondary schools by organizational level. | 1971-78 | The numbers of elementary and secondary teachers reported separately by the National Education Association were prorated to the NCES totals for each year. | 28 |
| Full-time-equivalent instructional staff | 1968, 1969, 1971, and 1973-75 | For each type and control of institution, the ratio of full-time-equivalent enrollment to full-time-equivalent instructional staff was interpolated. The interpolated ratios were applied to counts of full-time-equivalent enrollment for each year | 34 |
| | 1977, 1978 | Same methodology as above, with 1976 ratios held constant. | 34 |
| Full-time-equivalent senior instructional staff | 1968, 1969, 1971, and 1973-75 | For each type and control of institution, the percentage that full-time-equivalent senior instructional staff was of total full-time-equivalent instructional staff was interpolated. The interpolated percentages were applied to estimates of full-time-equivalent instructional staff for each year. | 34 |
| | 1977, 1978 | Same methodology as above, with 1976 percentages held constant. | 34 |
| Full-time senior instructional staff | 1968, 1969, 1971, and 1973-75 | For each type and control of institution, the percentage that full-time senior instructional staff was of full-time-equivalent senior instructional staff was interpolated. This percentage was applied to estimates of full-time-equivalent senior instructional staff for each year. | 33 |
| | 1977, 1978 | Same methodology as above, with 1976 percentages held constant. | 33 |
| Part-time senior instructional staff | 1968, 1969, 1971, and 1973-75 | For each type and control of institution, the percentage that the full-time-equivalent of part-time senior instructional staff was of part-time senior instructional staff was interpolated. This percentage was applied to estimates of part-time senior instructional staff for each year. | 33 |
| | 1977, 1978 | Same methodology as above, with 1976 percentage held constant. | 33 |
| Full-time junior instructional staff | 1968, 1969, 1971, and 1973-75 | For each type and control of institution, the percentage that full-time junior instructional staff was of full-time-equivalent junior instructional staff was interpolated. This percentage was applied to estimates of full-time-equivalent junior instructional staff. | 33 |
| | 1977, 1978 | Same methodology as above, with 1976 percentages held constant. | |
| Part-time junior instructional staff | 1968, 1969, 1971, and 1973-75 | For each type and control of institution, the percentage that the full-time-equivalent of part-time junior instructional staff was of part-time junior instructional staff was interpolated. These percentages were applied to estimates of part-time junior instructional staff for each year. | 33 |
| | 1977, 1978 | Same methodology as above, with 1976 percentages held constant. | 33 |

# Appendix D

# CLASSIFICATION OF DEGREES BY FIELD OF STUDY

[Individual fields listed in *Taxonomy of Instructional Programs in Higher Education*[1]]

**I. Social sciences**

Social sciences
- Social sciences, general
- Anthropology
- Archaeology
- Economics
- History
- Geography
- Political science and government
- Sociology
- Criminology
- International relations
- Afro-American (black culture) studies
- American Indian cultural studies
- Mexican-American cultural studies
- Urban studies
- Demography
- Area studies
- Other

Psychology
- Psychology, general
- Experimental psychology (animal and human)
- Clinical psychology
- Psychology for counseling
- Social psychology
- Psychometrics
- Statistics in psychology
- Industrial psychology
- Developmental psychology
- Physiological psychology
- Other

Public affairs and services
- Community services, general
- Public administration
- Parks and recreation management
- Social work and helping services (other than clinical social work)
- Law enforcement and corrections (baccalaureate and higher programs)
- International public service (other than diplomatic service)
- Other

Library science
- Library science, general
- Other

**II. Humanities**

Architecture and environmental design
- Environmental design, general
- Architecture
- Interior design
- Landscape architecture
- Urban architecture
- City, community, and regional planning
- Other

Fine and applied arts
- Fine arts, general
- Art (painting, drawing, sculpture)
- Art history and appreciation
- Music (performing, composition, theory)
- Music (liberal arts program)
- Music history and appreciation (musicology)
- Dramatic arts
- Dance

[1]Robert A. Huff and Marjorie O. Chandler, U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *A Taxonomy of Instructional Programs in Higher Education* (Washington, D.C., U.S. Government Printing Office, 1970).

Applied design (ceramics, weaving, textile design, fashion design, jewelry, metalsmithing, interior decoration, commercial art)
Cinematography
Photography
Other

Foreign languages
Foreign languages, general (concentration on more than one foreign language without major emphasis on one)
French
German
Italian
Spanish
Russian
Chinese
Japanese
Latin
Greek, classical
Hebrew
Arabic
Indian (Asiatic)
Scandinavian languages
Slavic languages (other than Russian)
African languages (non-Semitic)
Other

Communications
Communications, general
Journalism (printed media)
Radio/television
Advertising
Communications media (use of videotape, films, etc., oriented specifically toward radio/television)
Other

Letters
English, general
Literature, English
Comparative literature
Classics
Linguistics (includes phonetics, semantics, and philology)
Speech, debate, and forensic science (rhetoric and public address)
Creative writing
Teaching of English as a foreign language
Philosophy
Religious studies (excludes theological professions)
Other

**III. Natural Sciences and Miscellaneous Fields**

Mathematics and statistics
Mathematics, general
Statistics, mathematical and theoretical
Applied mathematics
Other

Computer and information sciences
Computer and information sciences, general
Information sciences and systems
Data processing
Computer programming
Systems analysis
Other

Engineering
Engineering, general
Aerospace, aeronautical, and astronautical engineering
Agricultural engineering
Architectural engineering
Bioengineering and biomedical engineering
Chemical engineering (includes petroleum refining)
Petroleum engineering (excludes petroleum refining)
Civil, construction, and transportation engineering
Electrical, electronics, and communications engineering
Mechanical engineering
Geological engineering
Geophysical engineering
Industrial and management engineering
Metallurgical engineering
Materials engineering
Ceramic engineering
Textile engineering
Mining and mineral engineering
Engineering physics
Nuclear engineering
Engineering mechanics
Environmental and sanitary engineering
Naval architecture and marine engineering
Ocean engineering
Engineering technologies (baccalaureate and higher programs)
Other

Physical sciences
Physical sciences, general
Physics, general (excludes biophysics)

Molecular physics
Nuclear physics
Chemistry, general (excludes biochemistry)
Inorganic chemistry
Organic chemistry
Physical chemistry
Analytical chemistry
Pharmaceutical chemistry
Astronomy
Astrophysics
Atmospheric sciences and meteorology
Geology
Geochemistry
Geophysics and seismology
Earth sciences, general
Paleontology
Oceanography
Metallurgy
Other

Biological sciences
Biology, general
Botany, general
Bacteriology
Plant pathology
Plant pharmacology
Plant physiology
Zoology, general
Pathology, human and animal
Premedical, predental, and preveterinary science
Pharmacology, human and animal
Physiology, human and animal
Microbiology
Anatomy
History
Biochemistry
Biophysics
Molecular biology
Cell biology (cytology, cell physiology)
Marine biology
Biometrics and biostatistics
Ecology
Entomology
Genetics
Radiology
Nutrition, scientific (excludes nutrition in home economics and dietetics)
Neurosciences
Toxicology
Embryology
Other

Agriculture and natural resources
Agriculture, general
Agronomy (field crops and crop management)
Soils science (management and conservation)
Animal science (husbandry)
Dairy science (husbandry)
Poultry science
Fish, game, and wildlife management
Horticulture (fruit and vegetable production)
Ornamental horticulture (floriculture, nursery science)
Agricultural and farm management
Agricultural economics
Agricultural business
Food science and technology
Forestry
Natural resources management
Agriculture and forestry technologies (baccalaureate and higher programs)
Range management
Other

Health professions
Health professions, general
Hospital and health care administration
Nursing (baccalaureate and higher programs)
Dentistry (D.D.S. or D.M.D. degree)
Dental specialties (work beyond first-professional degree, D.D.S. or D.M.D.)
Medicine (M.D. degree)
Medical specialties (work beyond first-professional degree, M.D.)
Occupational therapy
Optometry
Osteopathic medicine (D.O. degree)
Pharmacy
Physical therapy
Dental hygiene (baccalaureate and higher programs)
Public health
Medical record librarianship
Podiatry (Pod.D. or D.P.) or podiatric medine (D.P.M.)
Biomedical communication
Veterinary medicine (D.V.M. degree)
Veterinary medicine specialties (work beyond first-professional degree, D.V.M.)

- Speech pathology and audiology
- Chiropractic
- Clinical social work (medical and psychiatric and specialized rehabilitation services)
- Medical laboratory technologies (baccalaureate and higher programs)
- Dental technologies (baccalaureate and higher programs)
- Radiologic technologies (baccalaureate and higher programs)
- Other

Accounting

Business and management (excluding accounting)
- Business and commerce, general
- Business statistics
- Banking and finance
- Investments and securities
- Business management and administration
- Operations research
- Hotel and restaurant management
- Marketing and purchasing
- Transportation and public utilities
- Real estate
- Insurance
- International business
- Secretarial studies (baccalaureate and higher programs)
- Personnel management
- Labor and industrial relations
- Business economics
- Other

Education
- Education, general
- Elementary education, general
- Secondary education, general
- Junior high school education
- Higher education, general
- Junior and community college education
- Adult and continuing education
- Special education, general
- Administration of special education
- Education of the mentally retarded
- Education of the gifted
- Education of the deaf
- Education of the culturally disadvantaged
- Education of the visually handicapped
- Speech correction
- Education of the emotionally disturbed
- Remedial education
- Special learning disabilities
- Education of the physically handicapped
- Education of the multiply handicapped
- Social foundations (history and philosophy of education)
- Educational psychology (includes learning theory)
- Pre-elementary education (kindergarten)
- Educational statistics and research
- Education testing, evaluation, and measurement
- Student personnel (counseling and guidance)
- Educational administration
- Educational supervision
- Curriculum and instruction
- Reading education (methodology and theory)
- Art education (methodology and theory)
- Music education (methodology and theory)
- Mathematics education (methodology and theory)
- Science education (methodology and theory)
- Physical education
- Driver and safety education
- Health education (includes family life education)
- Business, commerce, and distributive education
- Industrial arts, vocational and technical education
- Agricultural education
- Home economics education
- Other

Other

Home economics
- Home economics, general
- Home decoration and home equipment
- Clothing and textiles
- Consumer economics and home management
- Family relations and child development
- Foods and nutrition (includes dietetics)
- Institutional management and cafeteria management
- Other

Law
- Law, general
- Other

Military sciences
- Military science (Army)
- Naval science (Navy, Marines)

Aerospace science (Air Force)
Other

Theology
Theological professions, general
Religious music
Biblical languages
Religious education
Other

Interdisciplinary studies
General liberal arts and sciences
Biological and physical sciences
Humanities and social sciences
Engineering and other disciplines
Other

# Appendix E
# GLOSSARY

## COURSES

*Degree-credit courses*

Courses which carry credit toward a bachelor's or higher degree.

*Individual lessons*

Instruction provided on a one-instructor/one-student basis in music, art, speech, etc.

*Non-credit courses*

Courses in which students receive no credit. Many of these courses were referred to previously as adult education courses.

*Non-degree-credit courses*

Courses extending not more than 3 years beyond high school and designed to prepare students for immediate employment in an occupation or cluster of occupations at the technical and/or semiprofessional level or at the craftsman-clerical level.

*Short courses*

Courses that carry no credit toward a degree because of less-than-prescribed length.

## DEGREES

*Associate degrees*

Degrees and awards based on less than 4 years of work beyond high school.

*Bachelor's or first-level degree*

Lowest degree conferred by a college, university, or professional school, requiring 4 or more years of academic work.

*Doctor's degree (except first-professional)*

Highest academic degree conferred by a university, including Ph.D. in any field, doctor of education, doctor of juridical science, and doctor of public health (preceded by professional degree in medicine or sanitary engineering).

*First-professional degree*

An academic degree which requires at least 2 academic years of previous college work for entrance and at least 6 academic years of college work for completion. This classification includes only degrees in the following fields of study: Law (LL.B. or J.D.); dentistry (D.D.S. or D.M.D.); medicine (M.D.); veterinary medicine (D.V.M.); chiropody or podiatry (D.S.C. or D.P.); optometry (O.D.); osteopathy (D.O.); theology (B.D.) chiropractic (D.C. or D.C.M.) and pharmacy (D.Phar.).

*Master's or second-level degree*

An academic degree higher than a bachelor's but lower than a doctor's. All degrees classified as first-professional are excluded.

## ENROLLMENT

*First-professional enrollment*

The enrollment in programs leading to a first-professional degree.

*First-year graduate enrollment*

The enrollment of graduate students who have not received credit for completing a full year toward a master's or doctor's degree.

*Full-time-equivalent enrollment*

The enrollment of full-time students plus the enrollment of part-time students converted to the equivalent number of full-time students.

*Full-time enrollment*

The enrollment of students taking courses with credits equal to at least 75 percent of the normal full-time semester courses load.

*Fourth year and beyond undergraduate enrollment*

The enrollment of undergraduate students who

have completed 3 or more years toward a bachelor's degree.

*Graduate enrollment*

The enrollment of students who have attained at least one bachelor's or first-professional degree and who are enrolled in courses creditable toward a master's or doctor's degree.

*Non-credit enrollment*

The enrollment of students who receive no credit toward a formal degree or award. This enrollment is excluded from the enrollment in institutions of higher education shown in *Projections*.

*Post-baccalaureate enrollment*

Graduate enrollment plus first-professional enrollment.

*Unclassified students*

Students taking courses creditable toward a degree or other formal award but who are not enrolled in such programs.

*Undergraduate enrollment*

The enrollment of students taking courses creditable toward a bachelor's degree or other formal award below the bachelor's degree level.

## EXPENDITURES, ELEMENTARY AND SECONDARY

*Current expenditures allocated to pupil costs*

Current expenditures for administration, instruction, plant operation and maintenance, fixed charges (retirement, social security, insurance, etc.) and other school services (pupil transportation, food services, health services, attendance services, and miscellaneous school services).

*Current expenditures, all programs*

Current expenditures for regular elementary and secondary school programs and current expenditures for other school programs including summer schools, adult education, community colleges, and community services.

*Expenditures, total*

Total current expenditures for all programs, capital outlay, and interest on school debt.

*Interest expenditures*

Any payment for the use of money borrowed in one fiscal year and payable in another. Interest on current loans (loans payable in the same fiscal year in which the money was borrowed) is included in current expenditures.

## EXPENDITURES, GENERAL

*Capital outlay*

Expenditures for land or existing buildings, improvement of grounds, construction of buildings, additions to buildings, and initial or additional equipment. Includes replacement and rehabilitation, and installment or lease payments (excluding interest) which have a terminal date and result in the acquisition of property.

*Constant dollars (1978-79)*

Expenditures data which are adjusted by means of price and cost indexes to equal the purchasing power of 1978-79 dollars. This eliminates inflationary factors and allows direct comparison between years.

*Current dollars*

Expenditure data which are not adjusted to compensate for inflation. (Projections of unadjusted expenditures are not included in this report.)

*Current expenditures*

Any expenditure except for capital outlay and retirement of debt (and interest payments in the case of elementary and secondary schools). If accounts are kept on the accrual basis, current expense includes total charges incurred, whether paid or unpaid. If accounts are kept on the cash basis, it includeds only actual disbursements.

*Debt service*

Payment for retirement of debt and for use of long-term loans (not repaid in the year made).

*Mandatory transfers*

All transfers from "Current Funds" which must be made to other fund groups in order to fullfill a binding legal obligation of the institution.

## EXPENDITURES, HIGHER EDUCATION

*Auxiliary enterprises*

Expenditures for services to students, faculty, or other staff for which a fee is charged that is directly related to, but not necessarily equal to, the cost of service (e.g., dormitories, food service, student stores).

*Current expenditures, total*

Total expenditures from current funds less expenditures from current funds which are used for capital

outlay.

*Current fund expenditures, total*

Expenditures for auxiliary enterprises, hospitals, independent operations, public services, organized research and related activities, student aid, and student education.

*Expenditures, total*

Expenditures for capital outlay, debt service including interest, and total current expenditures.

*Hospitals*

Expenditures associated with operation of the hospital. Expenditures for activities that take place within the hospital but that are more appropriately categorized as instruction or research are excluded from this category and accounted for in the appropriate categories.

*Independent operations*

Expenditures for operations that are independent of or unrelated to the primary missions of the institution (instruction, research, public service). This category is generally limited to expenditures for the operation of major federally funded research and development centers.

*Organized research*

Expenditures for all sponsored research and all separately budgeted research. Excludes expenditures for research carried on as part of regular instruction services (departmental research) which are included with expenditures for student education.

*Public services*

Expenditures for activities established primarily to provide noninstructional services beneficial to groups external to the institution.

*Related activities*

Expenditures for activities which exist to provide instructional or laboratory experience for students and which incidentally create goods or services that may be sold on the campus or to the general public. Expenditures made in addition to those necessary solely for the educational benefit of the students. Expenditures from current funds which cannot be reported under "student education" or "organized research" are included.

*Student aid*

Expenditures for assistance through scholarships, fellowships, and prizes. Recipients are not required to repay, either through services or monies.

*Student charges*

Charges for tuition, required fees, room and board. Required fees are those for matriculation, laboratory, library, health, etc. They do not include books. Student charges as reported under this heading are based on resident (in-State or in-district), undergraduate students.

*Student education*

Expenditures for those components of educational and general expenditures which are most closely related to instruction. Includes instruction and research which are part of regular instructional services (departmental research), libraries and other academic support, physical plant operation and maintenance, general administration, sponsored activities, and student services.

## INSTRUCTIONAL STAFF

*Instructor or above*

A faculty member with the title of professor, associate professor, assistant professor, instructor, lecturer, visiting professor, adjunct professor, or interim professor (or its equivalent).

*Junior instructor*

A professional assistant to an instructor or above. Junior staff members are usually graduate students with titles such as graduate assistant or teaching fellow.

*Full-time-equivalent instructional staff*

All full-time instructional staff plus part-time instructional staff converted to the equivalent number of full-time instructional staff.

## SCHOOLS

*Elementary schools*

Schools with teaching primarily organized by grades, composed of a span of grades not above grade eight.

*Independent nursery and kindergarten schools*

Schools that offer nursery and/or kindergarten instruction only.

*Other schools*

Residential schools for exceptional children (public and nonpublic), Federal schools for Indians, federally operated schools on Federal installations, and subcollegiate departments of public and private insti-

tutions of higher education.

*Regular schools*

Schools for normal children that satisfy the requirements of State education laws and offer at least one grade beyond kindergarten.

*Residential schools for exceptional children*

Schools outside the regular public and private school systems, including public and private residential schools for the deaf, blind, mentally deficient, epileptic, and delinquent.

*Secondary schools*

Schools with teaching organized by subject matter taught, composed of junior high and high schools.

*Special schools*

Schools, such as trade schools or business colleges, outside the regular school system.

# Appendix F
# STATISTICAL TABLES

**Figure F-1.—School-age population, with projections: United States, July 1968 to 1988**

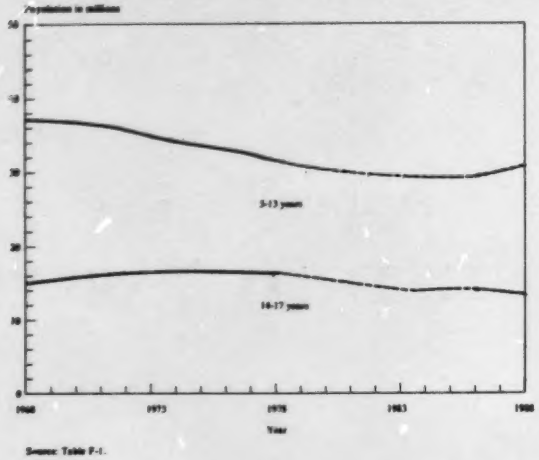


**Figure F-2.—Eighteen year old population, with projections: United States, July 1968 to 1988**

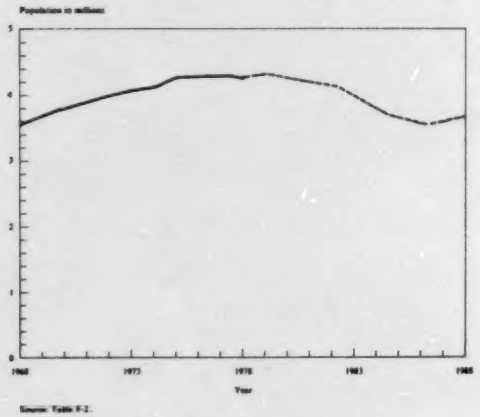


**Figure F-3.—College-age population, with projections: United States, July 1968 to 1988**

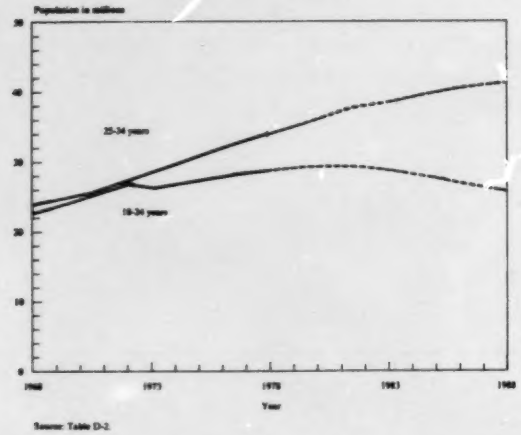

**Table F-1.—School-age populations (U.S. Census projection series II), ages 5, 6, 5-13, and 14-17 years: United States, as of July 1, 1968 to 1989**

**(In thousands)**

| Year (fall) | 5 years old | 6 years old | 5-13 years old | 14-17 years old |
|---|---|---|---|---|
| 1968 | 3,995 | 4,079 | 36,805 | 15,173 |
| 1969 | 3,923 | 4,007 | 36,837 | 15,560 |
| 1970 | 3,753 | 3,943 | 36,636 | 15,911 |
| 1971 | 3,543 | 3,776 | 36,104 | 16,281 |
| 1972 | 3,446 | 3,565 | 35,457 | 16,556 |
| 1973 | 3,364 | 3,466 | 34,737 | 16,747 |
| 1974 | 3,407 | 3,383 | 34,072 | 16,881 |
| 1975 | 3,491 | 3,428 | 33,439 | 16,933 |
| 1976 | 3,568 | 3,512 | 32,954 | 16,896 |
| 1977 | 3,264 | 3,589 | 32,225 | 16,791 |
| 1978 | 3,082 | 3,285 | 31,383 | 16,649 |
| | | Projected | | |
| 1979 | 3,012 | 3,103 | 30,641 | 16,273 |
| 1980 | 3,090 | 3,032 | 30,199 | 15,764 |
| 1981 | 3,044 | 3,110 | 29,803 | 15,219 |
| 1982 | 3,106 | 3,064 | 29,544 | 14,656 |
| 1983 | 3,202 | 3,126 | 29,335 | 14,308 |
| 1984 | 3,334 | 3,223 | 29,175 | 14,261 |
| 1985 | 3,493 | 3,355 | 29,098 | 14,392 |
| 1986 | 3,646 | 3,515 | 29,475 | 14,294 |
| 1987 | 3,750 | 3,668 | 30,142 | 13,964 |
| 1988 | 3,814 | 3,772 | 30,944 | 13,480 |
| 1989 | 3,860 | 3,837 | 31,715 | 12,997 |

SOURCE: U.S. Department of Commerce, Bureau of the Census: *Current Population Reports*, "Population Estimates and Projections," Series P-25.

**Table F-2.—College-age populations, ages 18, 18-24, and 25-34 years: United States, as of July 1, 1968 to 1989**
**(In thousands)**

| Year (fall) | 18 years old | 18-24 years old | 25-34 years old |
|---|---|---|---|
| 1968 | 3,540 | 22,883 | 23,990 |
| 1969 | 3,676 | 23,724 | 24,681 |
| 1970 | 3,780 | 24,687 | 25,293 |
| 1971 | 3,874 | 25,779 | 25,841 |
| 1972 | 3,970 | 25,913 | 27,403 |
| 1973 | 4,045 | 26,397 | 28,609 |
| 1974 | 4,093 | 26,915 | 29,776 |
| 1975 | 4,242 | 27,603 | 30,918 |
| 1976 | 4,253 | 28,165 | 32,045 |
| 1977 | 4,244 | 28,623 | 33,162 |
| 1978 | 4,229 | 28,981 | 33,948 |
| | | **Projected** | |
| 1979 | 4,292 | 29,299 | 35,009 |
| 1980 | 4,211 | 29,463 | 36,172 |
| 1981 | 4,146 | 29,513 | 37,462 |
| 1982 | 4,087 | 29,356 | 37,861 |
| 1983 | 3,917 | 29,022 | 38,540 |
| 1984 | 3,703 | 28,480 | 39,204 |
| 1985 | 3,604 | 27,852 | 39,859 |
| 1986 | 3,521 | 27,084 | 40,445 |
| 1987 | 3,567 | 26,445 | 40,861 |
| 1988 | 3,654 | 25,967 | 41,118 |
| 1989 | 3,733 | 25,630 | 41,222 |

SOURCE: U.S. Department of Commerce, Bureau of the Census: *Current Population Reports*, "Population Estimates and Projections," Series P-25.

**Table F-3.—School-age populations, by sex and by individual ages 3-15 years: United States, as of July 1, 1968 to 1989**
**(In thousands)**

| Year (fall) | 3 years old | 4 years old | 5 years old | 6 years old | 7 years old | 8 years old | 9 years old | 10 years old | 11 years old | 12 years old | 13 years old | 14 years old | 15 years old |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Part A. Men** | | | | | | | | | | | | | |
| 1968 | 1,885 | 2,006 | 2,037 | 2,073 | 2,129 | 2,061 | 2,090 | 2,174 | 2,111 | 2,048 | 2,017 | 2,017 | 1,962 |
| 1969 | 1,781 | 1,911 | 2,002 | 2,038 | 2,084 | 2,101 | 2,085 | 2,170 | 2,113 | 2,124 | 2,044 | 2,061 | 2,015 |
| 1970 | 1,733 | 1,810 | 1,912 | 2,009 | 2,046 | 2,053 | 2,121 | 2,172 | 2,104 | 2,127 | 2,124 | 2,086 | 2,060 |
| 1971 | 1,695 | 1,758 | 1,808 | 1,918 | 2,018 | 2,022 | 2,080 | 2,206 | 2,099 | 2,120 | 2,127 | 2,164 | 2,085 |
| 1972 | 1,717 | 1,719 | 1,756 | 1,814 | 1,927 | 1,994 | 2,047 | 2,163 | 2,132 | 2,114 | 2,119 | 2,166 | 2,161 |
| 1973 | 1,759 | 1,741 | 1,717 | 1,762 | 1,823 | 1,904 | 2,020 | 2,130 | 2,090 | 2,147 | 2,113 | 2,159 | 2,164 |
| 1974 | 1,802 | 1,783 | 1,738 | 1,722 | 1,770 | 1,800 | 1,928 | 2,101 | 2,057 | 2,105 | 2,146 | 2,153 | 2,157 |
| 1975 | 1,645 | 1,827 | 1,782 | 1,744 | 1,731 | 1,749 | 1,824 | 2,007 | 2,031 | 2,073 | 2,106 | 2,188 | 2,153 |
| 1976 | 1,552 | 1,668 | 1,826 | 1,787 | 1,752 | 1,710 | 1,772 | 1,899 | 1,940 | 2,046 | 2,074 | 2,147 | 2,187 |
| 1977 | 1,518 | 1,574 | 1,668 | 1,831 | 1,796 | 1,731 | 1,732 | 1,844 | 1,834 | 1,954 | 2,045 | 2,113 | 2,145 |
| 1978 | 1,557 | 1,541 | 1,575 | 1,674 | 1,841 | 1,775 | 1,754 | 1,804 | 1,782 | 1,849 | 1,954 | 2,085 | 2,112 |
| **Projected** | | | | | | | | | | | | | |
| 1979 | 1,535 | 1,580 | 1,542 | 1,581 | 1,682 | 1,819 | 1,798 | 1,827 | 1,743 | 1,796 | 1,849 | 1,922 | 2,084 |
| 1980 | 1,567 | 1,559 | 1,581 | 1,548 | 1,590 | 1,663 | 1,843 | 1,873 | 1,766 | 1,757 | 1,797 | 1,886 | 1,992 |
| 1981 | 1,615 | 1,590 | 1,560 | 1,587 | 1,556 | 1,571 | 1,685 | 1,920 | 1,810 | 1,779 | 1,758 | 1,832 | 1,885 |
| 1982 | 1,682 | 1,639 | 1,591 | 1,566 | 1,595 | 1,539 | 1,592 | 1,756 | 1,855 | 1,854 | 1,780 | 1,793 | 1,832 |
| 1983 | 1,764 | 1,707 | 1,641 | 1,597 | 1,574 | 1,577 | 1,559 | 1,660 | 1,697 | 1,869 | 1,824 | 1,815 | 1,793 |
| 1984 | 1,842 | 1,789 | 1,708 | 1,647 | 1,606 | 1,556 | 1,598 | 1,626 | 1,604 | 1,710 | 1,870 | 1,860 | 1,816 |
| 1985 | 1,895 | 1,868 | 1,790 | 1,715 | 1,655 | 1,587 | 1,577 | 1,666 | 1,570 | 1,617 | 1,711 | 1,907 | 1,861 |
| 1986 | 1,928 | 1,922 | 1,869 | 1,797 | 1,723 | 1,636 | 1,608 | 1,644 | 1,609 | 1,584 | 1,616 | 1,745 | 1,907 |
| 1987 | 1,952 | 1,955 | 1,923 | 1,875 | 1,805 | 1,703 | 1,658 | 1,676 | 1,588 | 1,623 | 1,584 | 1,650 | 1,746 |
| 1988 | 1,969 | 1,979 | 1,956 | 1,929 | 1,884 | 1,784 | 1,725 | 1,727 | 1,619 | 1,601 | 1,623 | 1,616 | 1,652 |
| 1989 | 1,981 | 1,997 | 1,980 | 1,962 | 1,938 | 1,862 | 1,807 | 1,797 | 1,668 | 1,632 | 1,601 | 1,655 | 1,618 |

See footnotes at end of table.

**Table F-3.—School-age populations, by sex and by individual ages 3-15 years: United States, as of July 1, 1968 to 1989—Cont.**

**(In thousands)**

| Year (fall) | 3 years old | 4 years old | 5 years old | 6 years old | 7 years old | 8 years old | 9 years old | 10 years old | 11 years old | 12 years old | 13 years old | 14 years old | 15 years old |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Part B. Women** | | | | | | | | | | | | | |
| 1968 | 1,824 | 1,929 | 1,959 | 2,005 | 2,005 | 1,988 | 2,018 | 2,091 | 2,030 | 1,972 | 1,947 | 1,950 | 1,889 |
| 1969 | 1,713 | 1,848 | 1,921 | 1,969 | 2,009 | 2,025 | 2,008 | 2,093 | 2,033 | 2,041 | 1,975 | 1,986 | 1,941 |
| 1970 | 1,670 | 1,741 | 1,841 | 1,934 | 1,968 | 1,976 | 2,030 | 2,089 | 2,030 | 2,045 | 2,047 | 2,011 | 1,980 |
| 1971 | 1,628 | 1,696 | 1,735 | 1,858 | 1,938 | 1,944 | 1,999 | 2,118 | 2,020 | 2,044 | 2,052 | 2,083 | 2,005 |
| 1972 | 1,651 | 1,653 | 1,689 | 1,751 | 1,861 | 1,913 | 1,966 | 2,078 | 2,048 | 2,034 | 2,051 | 2,088 | 2,076 |
| 1973 | 1,691 | 1,676 | 1,647 | 1,704 | 1,754 | 1,837 | 1,935 | 2,044 | 2,008 | 2,062 | 2,041 | 2,087 | 2,080 |
| 1974 | 1,722 | 1,716 | 1,669 | 1,661 | 1,707 | 1,731 | 1,858 | 2,012 | 1,975 | 2,022 | 2,069 | 2,076 | 2,079 |
| 1975 | 1,578 | 1,748 | 1,709 | 1,684 | 1,664 | 1,685 | 1,751 | 1,933 | 1,945 | 1,990 | 2,030 | 2,106 | 2,070 |
| 1976 | 1,488 | 1,602 | 1,742 | 1,724 | 1,687 | 1,643 | 1,705 | 1,822 | 1,868 | 1,959 | 1,997 | 2,066 | 2,099 |
| 1977 | 1,450 | 1,511 | 1,597 | 1,757 | 1,727 | 1,655 | 1,662 | 1,773 | 1,760 | 1,881 | 1,966 | 2,032 | 2,059 |
| 1978 | 1,489 | 1,473 | 1,507 | 1,612 | 1,761 | 1,705 | 1,685 | 1,729 | 1,714 | 1,774 | 1,889 | 2,001 | 2,026 |
| **Projected** | | | | | | | | | | | | | |
| 1979 | 1,464 | 1,512 | 1,469 | 1,522 | 1,615 | 1,738 | 1,725 | 1,753 | 1,672 | 1,727 | 1,780 | 1,922 | 1,995 |
| 1980 | 1,494 | 1,488 | 1,509 | 1,484 | 1,525 | 1,954 | 1,759 | 1,796 | 1,695 | 1,684 | 1,734 | 1,813 | 1,917 |
| 1981 | 1,540 | 1,518 | 1,484 | 1,523 | 1,487 | 1,505 | 1,614 | 1,831 | 1,736 | 1,708 | 1,691 | 1,765 | 1,808 |
| 1982 | 1,604 | 1,565 | 1,515 | 1,499 | 1,526 | 1,468 | 1,524 | 1,681 | 1,760 | 1,749 | 1,715 | 1,722 | 1,761 |
| 1983 | 1,681 | 1,629 | 1,561 | 1,529 | 1,502 | 1,507 | 1,486 | 1,588 | 1,624 | 1,782 | 1,756 | 1,746 | 1,718 |
| 1984 | 1,754 | 1,707 | 1,625 | 1,576 | 1,532 | 1,483 | 1,526 | 1,548 | 1,534 | 1,637 | 1,789 | 1,787 | 1,742 |
| 1985 | 1,804 | 1,782 | 1,702 | 1,640 | 1,579 | 1,513 | 1,501 | 1,589 | 1,496 | 1,546 | 1,643 | 1,822 | 1,783 |
| 1986 | 1,835 | 1,832 | 1,777 | 1,718 | 1,643 | 1,559 | 1,531 | 1,563 | 1,536 | 1,508 | 1,553 | 1,673 | 1,817 |
| 1987 | 1,858 | 1,864 | 1,827 | 1,793 | 1,721 | 1,622 | 1,578 | 1,594 | 1,511 | 1,547 | 1,514 | 1,581 | 1,670 |
| 1988 | 1,874 | 1,886 | 1,858 | 1,843 | 1,796 | 1,699 | 1,642 | 1,643 | 1,541 | 1,522 | 1,554 | 1,542 | 1,578 |
| 1989 | 1,884 | 1,902 | 1,881 | 1,875 | 1,846 | 1,772 | 1,719 | 1,709 | 1,587 | 1,552 | 1,529 | 1,582 | 1,539 |

SOURCE: U.S. Department of Commerce, Bureau of the Census: *Current Population Reports*, "Population Estimates and Projections," Series P-25.

**Table F-4.—College-age populations, by sex and individual ages and age groups 16-34 years: United States, as of July 1, 1968 to 1989**

**(In thousands)**

| Year (fall) | 16 years old | 17 years old | 18 years old | 19 years old | 20 years old | 21 years old | 22 years old | 23 years old | 24 years old | 25-29 years old | 30-34 years old | Total 18-24 years old | Total 25-34 years old |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Part A. Men** | | | | | | | | | | | | | |
| 1968 | 1,892 | 1,849 | 1,791 | 1,795 | 1,835 | 1,934 | 1,378 | 1,369 | 1,422 | 6,345 | 5,531 | 11,523 | 11,876 |
| 1969 | 1,945 | 1,902 | 1,858 | 1,801 | 1,845 | 1,797 | 1,894 | 1,351 | 1,403 | 6,594 | 5,622 | 11,948 | 12,216 |
| 1970 | 1,999 | 1,956 | 1,913 | 1,879 | 1,847 | 1,799 | 1,755 | 1,858 | 1,387 | 6,811 | 5,710 | 12,431 | 12,521 |
| 1971 | 2,040 | 2,003 | 1,958 | 1,927 | 1,919 | 1,793 | 1,752 | 1,717 | 1,911 | 6,941 | 5,858 | 12,977 | 12,799 |
| 1972 | 2,063 | 2,043 | 2,005 | 2,973 | 1,969 | 1,865 | 1,748 | 1,715 | 1,767 | 7,512 | 6,075 | 13,041 | 13,587 |
| 1973 | 2,139 | 2,066 | 2,045 | 2,020 | 2,016 | 1,913 | 1,818 | 1,712 | 1,766 | 7,754 | 6,441 | 13,290 | 14,195 |
| 1974 | 2,142 | 2,143 | 2,069 | 2,060 | 2,064 | 1,958 | 1,864 | 1,779 | 1,761 | 8,083 | 6,694 | 13,555 | 14,777 |
| 1975 | 2,136 | 2,147 | 2,146 | 2,085 | 2,106 | 2,006 | 1,909 | 1,826 | 1,832 | 8,432 | 6,915 | 13,910 | 15,347 |
| 1976 | 2,132 | 2,141 | 2,151 | 2,163 | 2,132 | 2,046 | 1,955 | 1,869 | 1,879 | 8,868 | 7,045 | 14,195 | 15,913 |
| 1977 | 2,164 | 2,136 | 2,143 | 2,166 | 2,210 | 2,070 | 1,994 | 1,913 | 1,924 | 8,837 | 7,640 | 14,419 | 16,477 |
| 1978 | 2,123 | 2,169 | 2,138 | 2,159 | 2,214 | 2,146 | 2,017 | 1,952 | 1,970 | 8,993 | 7,881 | 14,596 | 16,874 |
| **Projected** | | | | | | | | | | | | | |
| 1979 | 2,091 | 2,128 | 2,171 | 2,154 | 2,206 | 2,150 | 2,092 | 1,975 | 2,009 | 9,195 | 8,214 | 14,757 | 17,409 |
| 1980 | 2,063 | 2,096 | 2,130 | 2,188 | 2,201 | 2,143 | 2,095 | 2,048 | 2,033 | 9,438 | 8,555 | 14,837 | 17,993 |
| 1981 | 1,972 | 2,068 | 2,098 | 2,146 | 2,236 | 2,138 | 2,088 | 2,051 | 2,107 | 9,633 | 8,999 | 14,864 | 18,632 |
| 1982 | 1,867 | 1,977 | 2,070 | 2,113 | 2,193 | 2,171 | 2,083 | 2,044 | 2,111 | 9,856 | 8,973 | 14,787 | 18,829 |
| 1983 | 1,815 | 1,873 | 1,979 | 2,086 | 2,161 | 2,130 | 2,116 | 2,040 | 2,103 | 10,036 | 9,131 | 14,615 | 19,167 |
| 1984 | 1,776 | 1,820 | 1,874 | 1,994 | 2,132 | 2,098 | 2,076 | 2,072 | 2,099 | 10,165 | 9,333 | 14,345 | 19,498 |
| 1985 | 1,798 | 1,781 | 1,822 | 1,889 | 2,039 | 2,071 | 2,044 | 2,032 | 2,131 | 10,250 | 9,575 | 14,028 | 19,825 |
| 1986 | 1,842 | 1,803 | 1,783 | 1,836 | 1,932 | 1,980 | 2,018 | 2,002 | 2,091 | 10,345 | 9,770 | 13,642 | 20,115 |
| 1987 | 1,888 | 1,848 | 1,805 | 1,797 | 1,878 | 1,876 | 1,929 | 1,975 | 2,059 | 10,326 | 9,992 | 13,320 | 20,318 |
| 1988 | 1,729 | 1,894 | 1,850 | 1,819 | 1,838 | 1,824 | 1,828 | 1,889 | 2,032 | 10,274 | 10,170 | 13,079 | 20,444 |
| 1989 | 1,636 | 1,735 | 1,895 | 1,864 | 1,860 | 1,785 | 1,777 | 1,790 | 1,943 | 10,202 | 10,295 | 12,914 | 20,497 |

See footnotes at end of table.

**Table F-4.—College-age populations, by sex and individual ages and age groups 16-34 years: United States, as of July 1, 1968 to 1989—Cont.**

**(In thousands)**

| Year (fall) | 16 years old | 17 years old | 18 years old | 19 years old | 20 years old | 21 years old | 22 years old | 23 years old | 24 years old | 25-29 years old | 30-34 years old | Total 18-24 years old | Total 25-34 years old |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Part B. Women** | | | | | | | | | | | | | |
| 1968 | 1,823 | 1,791 | 1,749 | 1,763 | 1,785 | 1,877 | 1,369 | 1,378 | 1,439 | 6,455 | 5,659 | 11,360 | 12,114 |
| 1969 | 1,874 | 1,836 | 1,818 | 1,767 | 1,798 | 1,744 | 1,867 | 1,360 | 1,421 | 6,697 | 5,768 | 11,775 | 12,465 |
| 1970 | 1,929 | 1,888 | 1,867 | 1,844 | 1,804 | 1,754 | 1,735 | 1,853 | 1,392 | 6,906 | 5,866 | 12,249 | 12,772 |
| 1971 | 1,964 | 1,938 | 1,916 | 1,889 | 1,869 | 1,748 | 1,743 | 1,721 | 1,916 | 7,027 | 6,015 | 12,802 | 13,042 |
| 1972 | 1,988 | 1,972 | 1,965 | 1,938 | 1,913 | 1,810 | 1,737 | 1,729 | 1,780 | 7,586 | 6,230 | 12,872 | 13,816 |
| 1973 | 2,058 | 1,996 | 2,000 | 1,987 | 1,962 | 1,853 | 1,798 | 1,722 | 1,787 | 7,820 | 6,594 | 13,109 | 14,414 |
| 1974 | 2,063 | 2,067 | 2,024 | 2,022 | 2,012 | 1,900 | 1,840 | 1,782 | 1,780 | 8,149 | 6,850 | 13,360 | 14,999 |
| 1975 | 2,062 | 2,072 | 2,096 | 2,047 | 2,048 | 1,949 | 1,887 | 1,824 | 1,842 | 8,500 | 7,071 | 13,693 | 15,571 |
| 1976 | 2,053 | 2,072 | 2,102 | 2,120 | 2,073 | 1,983 | 1,935 | 1,871 | 1,886 | 8,939 | 7,193 | 13,970 | 16,132 |
| 1977 | 2,081 | 2,062 | 2,101 | 2,125 | 2,146 | 2,008 | 1,970 | 1,919 | 1,934 | 8,909 | 7,776 | 14,203 | 16,685 |
| 1978 | 2,042 | 2 091 | 2,091 | 2,125 | 2,153 | 2,080 | 1,996 | 1,955 | 1,985 | 9,062 | 8,012 | 14,385 | 17,074 |
| **Projected** | | | | | | | | | | | | | |
| 1979 | 2,009 | 2,052 | 2,121 | 2,115 | 2,152 | 2,086 | 2,067 | 1,989 | 2,021 | 9,256 | 8,344 | 14,542 | 17,600 |
| 1980 | 1,978 | 2,019 | 2,081 | 2,145 | 2,143 | 2,086 | 2,073 | 2,050 | 2,047 | 9,492 | 8,687 | 14,625 | 18,179 |
| 1981 | 1,901 | 1,988 | 2,048 | 2,105 | 2,172 | 2,076 | 2,073 | 2,056 | 2,119 | 9,691 | 9,139 | 14,649 | 18,830 |
| 1982 | 1,794 | 1,911 | 2,017 | 2,072 | 2,132 | 2,105 | 2,063 | 2,056 | 2,126 | 9,919 | 9,113 | 14,571 | 19,032 |
| 1983 | 1,747 | 1,803 | 1,938 | 2,040 | 2,098 | 2,066 | 2,092 | 2,047 | 2,126 | 10,104 | 9,269 | 14,407 | 19,373 |
| 1984 | 1,704 | 1,756 | 1,829 | 1,961 | 2,066 | 2,033 | 2,054 | 2,075 | 2,116 | 10,240 | 9,466 | 14,135 | 19,706 |
| 1985 | 1,728 | 1,713 | 1,782 | 1,851 | 1,986 | 2,002 | 2,021 | 2,037 | 2,145 | 10,331 | 9,703 | 13,824 | 20,034 |
| 1986 | 1,769 | 1,737 | 1,738 | 1,803 | 1,875 | 1,925 | 1,990 | 2,005 | 2,106 | 10,426 | 9,904 | 13,443 | 20,330 |
| 1987 | 1,803 | 1,778 | 1,762 | 1,759 | 1,826 | 1,817 | 1,914 | 1,975 | 2,073 | 10,410 | 10,133 | 13,126 | 20,543 |
| 1988 | 1,657 | 1,812 | 1,804 | 1,783 | 1,782 | 1,770 | 1,807 | 1,899 | 2,042 | 10,357 | 10,317 | 12,887 | 20,674 |
| 1989 | 1,566 | 1,666 | 1,838 | 1,825 | 1,806 | 1,728 | 1,761 | 1,794 | 1,964 | 10,273 | 10,452 | 12,716 | 20,725 |

SOURCE: U.S. Department of Commerce, Bureau of the Census: *Current Population Reports*, "Population Estimates and Projections," Series P-25.

## Table F-5.—Constant dollar indexes[1]
## (1978-79 = 100)

| School year | CPI[2] | PGSL[3] | PICNR[4] |
|---|---|---|---|
| 1963-64 | .451 | .370 | .349 |
| 1964-65 | .456 | .379 | .355 |
| 1965-66 | .466 | .393 | .368 |
| 1966-67 | .480 | .417 | .384 |
| 1967-68 | .495 | .442 | .402 |
| 1968-69 | .520 | .469 | .424 |
| 1969-70 | .551 | .502 | .463 |
| 1970-71 | .579 | .542 | .498 |
| 1971-72 | .600 | .574 | .533 |
| 1972-73 | .625 | .612 | .563 |
| 1973-74 | .680 | .662 | .632 |
| 1974-75 | .756 | .737 | .763 |
| 1975-76 | .810 | .793 | .805 |
| 1976-77 | .856 | .853 | .841 |
| 1977-78 | .914 | .921 | .907 |
| 1978-79 | 1.000 | 1.000 | 1.000 |
| **From intermediate trend projection of U.S. Economy[5]** | | | |
| 1979-80 | 1.121 | 1.095 | 1.109 |
| 1980-81 | 1.223 | 1.190 | 1.218 |
| 1981-82 | 1.326 | 1.295 | 1.342 |
| 1982-83 | 1.440 | 1.412 | 1.487 |
| 1983-84 | 1.557 | 1.529 | 1.630 |
| 1984-85 | 1.679 | 1.653 | 1.769 |
| 1985-86 | 1.808 | 1.787 | 1.921 |
| 1986-87 | 1.947 | 1.932 | 2.094 |
| 1987-88 | 2.095 | 2.089 | 2.284 |
| 1988-89 | 2.249 | 2.253 | 2.476 |
| **From cyclical projection of U.S. Economy[6]** | | | |
| 1979-80 | 1.130 | ... | 1.116 |
| 1980-81 | 1.261 | ... | 1.242 |
| 1981-82 | 1.374 | ... | 1.362 |
| 1982-83 | 1.493 | ... | 1.502 |
| 1983-84 | 1.633 | ... | 1.702 |
| 1984-85 | 1.788 | ... | 1.892 |
| 1985-86 | 1.917 | ... | 2.025 |
| 1986-87 | 2.050 | ... | 2.175 |
| 1987-88 | 2.226 | ... | 2.426 |
| 1988-89 | 2.428 | ... | 2.681 |
| **From low trend projection of U.S. Economy[7]** | | | |
| 1979-80 | 1.122 | 1.096 | 1.109 |
| 1980-81 | 1.226 | 1.194 | 1.222 |
| 1981-82 | 1.334 | 1.304 | 1.352 |
| 1982-83 | 1.455 | 1.428 | 1.504 |
| 1983-84 | 1.581 | 1.554 | 1.655 |
| 1984-85 | 1.713 | 1.689 | 1.806 |
| 1985-86 | 1.855 | 1.836 | 1.972 |
| 1986-87 | 2.008 | 1.996 | 2.161 |
| 1987-88 | 2.172 | 2.172 | 2.370 |
| 1988-89 | 2.346 | 2.357 | 2.585 |

See footnotes at end of table.

## Table F-5.—Constant dollar indexes[1]—Cont.

**(1978-79 = 100)**

| School year | CPI[2] | PGSL[3] | PICNR[4] |
|---|---|---|---|
| | | From high trend projection of U.S. Economy[5] | |
| 1979-80 | 1.121 | 1.094 | 1.108 |
| 1980-81 | 1.219 | 1.185 | 1.213 |
| 1981-82 | 1.317 | 1.285 | 1.332 |
| 1982-83 | 1.424 | 1.394 | 1.471 |
| 1983-84 | 1.533 | 1.503 | 1.606 |
| 1984-85 | 1.645 | 1.616 | 1.734 |
| 1985-86 | 1.761 | 1.735 | 1.872 |
| 1986-87 | 1.885 | 1.863 | 2.030 |
| 1987-88 | 2.015 | 1.999 | 2.201 |
| 1988-89 | 2.149 | 2.140 | 2.368 |

[1]For each series, the monthly indexes were averaged on a July-to-June basis to correspond with the school year and converted to 1978-79=100.

[2]All Urban Consumer Price Index.

[3]Implicit Price Deflator for State and Local Government Purchases of Goods and Services.

[4]Implicit Price Deflator for Investment in Private Nonresidential Structures.

[5]These projections were used as deflators in the intermediate alternative projections of all categories of expenditures.

[6]These projections were used as deflators in the low alternative projections of Current and Capital Expenditures of Public and Nonpublic Institutions of Higher Education.

[7]These projections were used as deflators in the low alternative projections of Current, Interest and Capital Expenditures of Public and Nonpublic Elementary and Secondary Schools.

[8]These projections were used as deflators in the high alternative projections of all categories of expenditures.

SOURCE: Historical and projected data were obtained from Data Resources, Inc.'s, U.S. Macroeconomic Model.

## Table F-6.—Constant dollar economic variables used to project expenditure series[1]

### (1978-79 dollars)

| School year | GSL9[2] (State & local expenditures, in billions) | GICV9[3] (Public construction, in billions) | BS&L[4] (State & local obligations, in billions) | RMAAAGSLNS9[5] (Yield on state and local bonds) | YPCAP9[6] (Personal income per capita, in thousands) |
|---|---|---|---|---|---|
| 1963-64 | 167.343 | 59.792 | 194.368 | 3.115 | 5.566 |
| 1964-65 | 177.743 | 61.151 | 205.894 | 3.068 | 5.834 |
| 1965-66 | 191.469 | 66.267 | 216.839 | 3.386 | 6.154 |
| 1966-67 | 203.520 | 68.080 | 222.855 | 3.698 | 6.379 |
| 1967-68 | 214.333 | 69.537 | 230.569 | 4.037 | 6.581 |
| 1968-69 | 225.609 | 69.818 | 239.392 | 4.621 | 6.814 |
| 1969-70 | 230.745 | 61.303 | 244.443 | 6.124 | 6.900 |
| 1970-71 | 241.585 | 61.685 | 253.565 | 5.576 | 6.933 |
| 1971-72 | 250.536 | 58.706 | 272.368 | 5.103 | 7.170 |
| 1972-73 | 259.774 | 58.630 | 283.484 | 5.010 | 7.590 |
| 1973-74 | 269.359 | 58.459 | 281.066 | 5.219 | 7.667 |
| 1974-75 | 276.318 | 52.577 | 270.667 | 6.327 | 7.472 |
| 1975-76 | 283.777 | 52.019 | 270.978 | 6.247 | 7.600 |
| 1976-77 | 281.227 | 44.564 | 272.088 | 5.279 | 7.841 |
| 1977-78 | 289.191 | 43.922 | 277.339 | 5.296 | 8.117 |
| 1978-79 | 296.200 | 47.068 | 277.466 | 5.708 | 8.305 |
| **From intermediate trend projection of U.S. Economy** | | | | | |
| 1979-80 | 297.437 | 44.193 | 265.559 | 6.262 | 8.081 |
| 1980-81 | 297.952 | 40.360 | 263.875 | 6.086 | 8.075 |
| 1981-82 | 300.904 | 38.346 | 263.946 | 6.555 | 8.289 |
| 1982-83 | 306.237 | 36.888 | 264.242 | 6.954 | 8.453 |
| 1983-84 | 312.600 | 35.986 | 265.843 | 6.848 | 8.573 |
| 1984-85 | 319.760 | 35.402 | 268.015 | 6.640 | 8.692 |
| 1985-86 | 329.084 | 35.180 | 271.216 | 6.469 | 8.881 |
| 1986-87 | 339.550 | 35.113 | 275.132 | 6.443 | 9.112 |
| 1987-88 | 350.608 | 35.087 | 279.932 | 6.381 | 9.310 |
| 1988-89 | 360.752 | 34.938 | 285.854 | 6.225 | 9.443 |
| **From cyclical projection of U.S. Economy** | | | | | |
| 1979-80 | ... | 44.064 | ... | ... | 8.046 |
| 1980-81 | ... | 39.832 | ... | ... | 7.828 |
| 1981-82 | ... | 37.816 | ... | ... | 8.023 |
| 1982-83 | ... | 36.293 | ... | ... | 8.265 |
| 1983-84 | ... | 35.498 | ... | ... | 8.589 |
| 1984-85 | ... | 35.437 | ... | ... | 8.575 |
| 1985-86 | ... | 35.189 | ... | ... | 8.552 |
| 1986-87 | ... | 34.531 | ... | ... | 8.744 |
| 1987-88 | ... | 34.081 | ... | ... | 9.050 |
| 1988-89 | ... | 34.056 | ... | ... | 8.994 |
| **From low trend projection of U.S. Economy** | | | | | |
| 1979-80 | 297.482 | 44.195 | 265.355 | 6.271 | 8.078 |
| 1980-81 | 297.938 | 40.365 | 263.278 | 6.160 | 8.061 |
| 1981-82 | 300.454 | 38.312 | 262.496 | 6.714 | 8.249 |
| 1982-83 | 304.875 | 36.762 | 261.861 | 7.170 | 8.377 |
| 1983-84 | 310.119 | 35.744 | 262.492 | 7.091 | 8.469 |
| 1984-85 | 316.106 | 35.041 | 263.630 | 6.904 | 8.566 |
| 1985-86 | 324.209 | 34.707 | 265.784 | 6.769 | 8.728 |
| 1986-87 | 333.390 | 34.536 | 268.626 | 6.756 | 8.929 |
| 1987-88 | 343.008 | 34.399 | 272.411 | 6.756 | 9.098 |
| 1988-89 | 351.545 | 34.133 | 277.229 | 6.615 | 9.196 |

See footnotes at end of table.

**Table F-6.—Constant dollar economic variables used to project expenditure series[1]—Cont.**

**(1978-79 dollars)**

| School year | GSL9[2] (State & local expenditures, in billions) | GICV9[3] (Public construction, in billions) | BS&L[4] (State & local obligations, in billions) | RMAAAGSLNS9[5] (Yield on state and local bonds) | YPCAP9[6] (Personal income per capita, in thousands) |
|---|---|---|---|---|---|
| | | | From high trend projection of U.S. Economy | | |
| 1979-80 | 192.467 | 44.191 | 265.649 | 6.252 | 8.081 |
| 1980-81 | 208.880 | 40.356 | 264.470 | 6.014 | 8.089 |
| 1981-82 | 229.013 | 38.389 | 265.410 | 6.393 | 8.329 |
| 1982-83 | 253.788 | 37.027 | 266.665 | 6.740 | 8.531 |
| 1983-84 | 280.290 | 36.244 | 269.270 | 6.614 | 8.681 |
| 1984-85 | 309.194 | 35.780 | 272.669 | 6.382 | 8.822 |
| 1985-86 | 342.875 | 35.671 | 276.947 | 6.160 | 9.036 |
| 1986-87 | 381.106 | 35.706 | 281.982 | 6.076 | 9.296 |
| 1987-88 | 423.928 | 35.786 | 288.010 | 5.981 | 9.523 |
| 1988-89 | 468.502 | 35.747 | 295.044 | 5.800 | 9.681 |

[1]For each series the monthly data were averaged on a July-to June basis to correspond with the school yea.

[2]State and local government purchases of goods and services.

[3]New public construction put-in-place by all levels of government.

[4]State and local government obligations outstanding.

[5]Yield on AAA State and local government bonds (general obligations).

[6]Personal income per capita.

SOURCE: Historical and projected data were obtained from Data Resources, Inc.'s, U.S. Macroeconomic Model.

## Table F-7.—Constant dollar weights[1]

| School year | Rent | Fuel | Composite (80% rent, 20% fuel and utilities) | Food |
|---|---|---|---|---|
| 1974-75 | 1.2668 | 1.4045 | 1.2943 | 1.3268 |
| 1975-76 | 1.2030 | 1.2748 | 1.2174 | 1.2462 |
| 1976-77 | 1.1383 | 1.1622 | 1.1431 | 1.2059 |
| 1977-78 | 1.0701 | 1.0673 | 1.0695 | 1.1152 |

[1]Based on components of the All Urban Consumer Price Index.

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